THE VETERINARY RECORD

A Weekly Journal for the Profession.

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The Camden Town Address.

Those who attended the inaugural meeting at Camden Town heard an interesting address from Prof. Buckmaster, who, during his short connection with the veterinary profession, has certainly familiarised himself with some of the most important questions relating to it.

Two subjects dealt with by Prof. Buckmaster deserve some consideration, and one of these is of very immediate interest—the proposal to establish what may be called a Veterinary D.P.H. degree, which is under the consideration of the Council during the current week, and may already have been decided. The opinion that one is necessary is undoubtedly gaining ground. If the diploma is established, we should do well to follow the lines of the medical profession in one respect at least—the postgraduate training required before obtaining the diploma should be, as Prof. Buckmaster tells us the analogous D.P.H. course is—"very largely practical rather than theoretical." The practical veterinary clinician is one thing; the practical veterinary sanitarian is another, and it should never be forgotten that the training of the former by no means includes all that is requisite for the work of the latter. Any clinician can obtain such additional theoretical knowledge as is necessary for public health work from books, but practical training and experience in the laboratory and the slaughter-house are equally essential for the production of the competent veterinary sanitarian. The enterprise of some educational institutions has already provided the necessary facilities for training; the only question still to be decided is whether that training would not be advantageously supplemented by a diploma from the R.C.V.S.

Prof. Buckmaster also dealt at some length with the desirability of adequate State provision for veterinary education and research work. Everyone will agree with him as to the desirability of such provision, both from a professional and a national point of view. That both will come sooner or later is certain, and the time is perhaps nearer than many of us suppose. Germany and France, quoted by Prof. Buckmaster, have recognised the national benefits accruing from State provision for scientific work, including veterinary work, and are now able to show the reality of the benefits by results. There is more intercourse between England and the Continent now than ever before, and it can only be a matter of time before practice which has yielded good results in one country is copied by the rest. A slight beginning has already been made in England—a very slight one, it is true—but that will pave the way for more to follow.

Veterinary Inspection at Scottish Shows.

Something like a revolution in Scottish showyards was initiated when the donor of the Brydon Challenge Shield made veterinary examination of horses one of the conditions of his trophy. Like most innovations, this did not meet with universal favour, but it is gaining ground, and the unanimous decision of the Cawdor Cup Committee in favour of veterinary inspection, reported upon another page, will probably establish the practice throughout Scotland. The necessity of veterinary inspection, especially in the case of stallions, is indisputable; and we are glad to note its recognition by Scottish as well as English horseowners. It is matter for congratulation, also, that the Cawdor Cup Committee have entrusted the inspection to so strong a veterinary staff. Messrs. Robb and Rutherford, with Prof. McCall as referee, are men whose names will go far to satisfy any who still dislike the much-needed innovation.

The "National"—Reconstitution.

The scheme for reconstitution has been advanced another stage. The Harrogate Committee had, as directed, submitted the Draft Scheme to the President and Secretary of each of the local Societies in Great Britain and Ireland; those gentlemen returned their comments and suggestions, which were summarised by Dr. Bradley and Mr. Gofton, and printed, and on Sept. 25 a meeting of the Committee was held at Manchester, this summary was discussed, an amended form of the Draft Scheme was approved, and is to be printed and copies sent to the Secretaries of Societies for issue to their members, for discussion at as early a date as possible.

It has long been recognised that the work of the world—in the way of advancement—is done by a few men. In this instance the brunt of the work has fallen on Dr. Bradley and Mr. Gofton, although they have been supported by Prof. Macqueen, and by Messrs. Malcolm, McKenny, Hunting, Trevor Spencer—to mention only a few whose names come uppermost to mind. But however good the work of these men, however enthusiastic in the general cause they may be, their work may be greatly hindered, and possibly to some extent nullified by carelessness and indifference on the part of some members of the general body. All of us who have any experience of meetings know what an intolerable nuisance that man is who comes to the meeting without having given two minutes thought to the subject before he enters the room, possibly without even having read the papers sent him—treating those men who are working for him worse than he would the tax-collector—and wastes the time and dulls the keenness of those who have mastered the subject beforehand.

This movement for unification is but little less important than the V.S. Amendment Bill, though in rather a different direction, and simple courtesy, if no other con-

sideration, demands that each man should carefully read the Draft Scheme, and that the respective Presidents and Secretaries should arrange for its discussion without undue delay.

Necessarily, the first essential is that the newly constituted Society "be established on a sound footing, and prove its stability and its desire to fulfil its extended obligations," but once that is accomplished we may hope that the Associations of our comrades in Canada, in Australia and New Zealand, in South Africa, and, perchance, that other great organisations of practitioners of the Anglo Saxon race, may be linked up, at least on the scientific and social sides, by bonds none the less strong than they are light.

WHAT IS THE DIAGNOSIS?

The following appears to be a rather peculiar case, and any comments or expressions of opinion, editorial or otherwise, as to its possible nature would be much appreciated by the writer.

Subject.—Black mare, height 16 hands, age 10 years. Previous veterinary history unimportant.

Clinical Notes of the Case. June 5th, 1909.—Found lame on the near hind limb about mid-day, one hour after returning from work (cavalry drill). Mare is very stiff when first moving off, but lameness decreases as she goes on, and she can then move at a trot without difficulty. There is some recent enlargement of the fetlock, and œdema of the metatarsus, extending, in as light degree, up to the hock. On attempting to raise the foot, found much difficulty in doing so, the animal being unable to properly flex the stifle or allow of abduction of the thigh.

Examination shows pronounced swelling and very marked induration of the subcutaneous and muscular tissue and fascia on the internal surface of the thigh, commencing from a point about four inches below the level of the stifle joint and extending, in an upward direction, to the iliac furrow or inner proximal extremity of the limb. The left half of the udder is also slightly enlarged. The swelling is essentially indurated. It is non-fluctuating and only very slightly painful to pressure. It is more or less circumscribed but quite irregular in outline, and is situated in the anterior half of the internal surface of the upper part of the thigh, and would appear to involve the anterior two-thirds of the gracilis muscle and the sartorius. Viewed from behind, no abormality can be discerned, the posterior and postero-internal aspects of the thigh being quite normal. Save for the fact that it is comparatively painless, the swelling conveys an impression that it is probably the commencement of a suppurative process. The mare is to be rested, salines administered, and hot fomentations and glycerin belladon. applied to the affected part.

June 8th.—Condition much improved, practically no lameness; the swelling on internal surface of thigh has considerably diminished and induration is much less marked.

June 16.—Improvement maintained. There is no lameness, no difficulty in obtaining passive movement of the limb, and there is now only a very slight degree of swelling and induration. A distension of the cutaneous veins of the part is noticeable. There is no apparent enlargement of the neighbouring lymphatic glands. (Owing to general swelling of the part this could not be previously determined.)

June 23.—Favourable progress has been continued until to-day, when there has now occurred a severe relapse. The mare was sent out of hospital, back to her squadron stable in order to make room for others three days ago, 20th inst., and has been given light exercise. She was doing well on the 21st, and was said to be perfectly right yesterday, but to-day she is found dead lame, almost incapable of trotting, and a great increase in the swelling and induration on the internal surface of the thigh (which is now more extensive than ever) has occurred. Moreover, the part is now distinctly painful to pressure. Same treatment to be repeated.

June 27.—There is now general inflammatory swelling of the greater part of the limb, including the point of the hock. There is great lameness and no change in the condition of the inner surface of thigh. Temperature normal, and no constitutional disturbance of any moment. Is it a case of lymphangitis? Aloes ʒvi. and calomel ʒi. administered, and same treatment continued.

June 30.—There is general improvement, both in lameness and in the physical condition of the limb.

July 5.—Improvement maintained. The general swelling of the limb has disappeared, though enlargement and induration of the adductor muscles at the upper end of thigh is still present, but in a much less degree. The mare is quite lame trotting, most marked when first starting off.

July 12.—Progressing favourably in every way.

July 20.—Favourable progress maintained.

July 23.—Mare is now perfectly sound, though a very slight degree of swelling and induration and distension of the superficial veins is still perceptible.

The mare is struck off the sick list and returned to duty, and the case officially recorded as one of "sprain-muscle—adductors of thigh."

The mare remained at duty and was hard at work with Brigade and Divisional training, etc., till the 28th August, on the morning of which date she was again found (for the third time) to be very lame on the same limb. Swelling on the internal surface of the thigh is somewhat greater than its maximum previous size, and extends over a larger area and is more diffuse, the external, front, and internal aspects of the stifle joint being now also involved.

Aug. 30.—Swelling has increased further, but is still confined to neighbourhood of stifle and upper antero internal surface of thigh. The whole region is indurated, tense, and painful; there is severe lameness, and every appearance of impending suppuration. (If suppuration should take place, the possibility of a splinter or other foreign body embedded in the tissues seems more than likely. There is still no noteworthy constitutional derangement.

Aug. 31.—Slight improvement. Swelling less tense and indurated, and lameness decreased.

Sept. 1.—Slight improvement continued—the swelling now very distinctly pits on pressure. It

appears sensitive, but considerably less painful. Lameness much less severe.

Sept. 2.—No change in physical condition, but lameness has further decreased and the mare can now walk comfortably. She is therefore returned to barracks (from manœuvres) by rail. Pitting on pressure is still a noticeable feature.

Sept. 25.—The patient not seen by the writer again till this date, but from information obtained it appears that general improvement and partial resolution of the inflammatory condition has been uninterruptedly continued.

Present condition. The mare is now perfectly sound in action, but there is still, as before, the same well-marked, general diffuse swelling around the region of the stifle joint and internal surface of the thigh. The enlargement, however, is quite painless, and gives no trace of fluctuation. It is, in fact, of a more or less fibrous consistence, with still, in some parts, a very slight tendency to pit on pressure. Measurement of the circumference of the thighs at the level of the stifle joint shows an increase of eight inches on the affected side.

Sept. 30.—No change. The mare is now doing light duty, and (for this last attack) a guarded diagnosis of "cellulitis" has been officially recorded.

C. H. H. J.

1st Life Guards, Windsor.

[We should incline to accept the diagnosis of "sprain of adductor muscles."—Ed.]

ABSTRACTS FROM FOREIGN JOURNALS.

The Action of Digalen upon the Horse.

Digalen is a new product of digitalis, introduced by Prof. Cloetta, and prepared after his directions from digitalis leaves by the pharmaceutical firm of Hoffmann, La Roche and Co., of Basel, Switzerland, and Grenzach, Baden. Cloetta considers digalen to be an amorphous and water soluble form of digitoxin, and designates it "soluble digitoxin." The pure drug is a white amorphous powder, differing from digitoxin by its lower molecular weight, in addition to its amorphicity and solubility in water. The digalen sold for medical purposes is a sterile watery solution of this "soluble digitoxin," mixed with 25 per cent. of glycerine and 5 per cent. alcohol. One cubic centimetre of the solution contains 0·3 milligramme of Cloetta's soluble digitoxin. The solution is sent out in bottles containing 15 c.c. each. It gives the chemical reactions of digitoxin, and is also tested pharmacologically before being sent out.

Cloetta introduced this soluble digitoxin or "digalen" in 1904; and there are already very numerous reports of its action in human medicine, all commending it in comparison with the other preparations of digitalis in use, on account of its markedly quicker effect, and its freedom from irritant action upon the gastric mucous membrane.

These numerous and exceptionally favourable reports from human medicine have led Minder, of Bern, to make extensive trials of the drug upon horses for more than three years past. He has given it both by the mouth, and by subcutaneous, intra-muscular, and intra-venous injection.

For *Oral* administration Minder used doses of 30 c.c., either giving the digalen pure or making it into balls with rad. althœæ pulv. He was unable to observe any effect from the oral administration of digalen.

Subcutaneous injection is preferably practised at the side of the neck. In this case the injection is not generally followed by any local reaction, but infiltrations may develope and attain the size of the palm of the hand or less. These infiltrations are soft and œdematous, and show tenderness and increased heat. They are benign, and disappear in the course of from one to three days.

Minder's experience of subcutaneous injection in front of the chest was less favourable. Here large —sometimes very large — œdematous swellings developed, causing the horses great pain and interfering with movement; even these swellings, however, subsided without abscess formation, and without leaving alterations of the tissues behind.

Intra-muscular injection may be practised at the neck, but the forearm is preferable. In the great majority of cases this causes no local reaction, but Minder has seen lameness and dropping of the limb, with or without swelling of the muscles concerned, in isolated cases. These reactions also very quickly recover completely without treatment.

In one case, Minder saw an abscess appear, which he attributed to the injection of too large a quantity (12 c.c.) of digalen. This abscess healed after opening and disinfection, without leaving any permanent ill effects.

Intra venous injection apparently causes no local reaction; digalen does not injure the tunica intima of the vessels, and does not affect the blood.

All these injections should be carried out with the most careful asepsis; and it is also advisable, after subcutaneous and intra-muscular injection to practise light massage of the part. Contrary to what is the case in human medicine, any local œdema appearing after the injection does not seem to trouble the horse; Minder never observed that a horse had attempted to lick or rub the site of injection.

On two occasions, both being after *subcutaneous* injections, Minder observed a peculiar after-effect. This was the development of a painful swelling about 6 to 8 inches long by 1½ inches broad which, in the course of a week became completely circumscribed by a thin (1/5th to 1/6th of an inch broad) area of intensely acrid exudation from the skin. Dry necrosis of the skin over the circumscribed swelling followed; but as this progressed very slowly, and the subsequent cicatrisation was satisfactory only a small thin scar remained as the final effect.

The *systemic* action of digalen upon the horse is well marked when given by injection. After each therapeutic injection the general condition of the patient is improved, the aspect becomes more bright and lively, and the appetite is increased.

This effect, which is evident to unprofessional observers, is due to strengthening of the heart's action, with consequent improvement of the circulation. The respiration also becomes freer and more easy, in consequence of the increased oxidation of blood in the pulmonary capillaries.

Digalen increases the contractility of the elastic fibres of the myocardium, thus causing the contractions of the heart muscle to be more powerful, and the arterial pulse consequently more full. The diastolic pauses of the heart become longer and more definite under the influence of digalen, and therefore the circulation of blood within the heart muscle itself is considerably facilitated.

Usually retardation of the pulse appears about three or four hours after the subcutaneous or intramuscular injection of digalen, and is then maintained in most cases for at least a day, during which time the heart muscle may recover so far as to maintain its strength after the effect of the drug has passed off. Irregular and intermittent action of the heart is also benefitted by digalen.

Digalen is strongly recommended in œdema depending upon disturbances of compensation, and also to further the absorption of pleural effusions in exudative pleurisy.

The excretion of urine is increased by Digalen; but this depends, not upon any specific irritation of the kidneys, but simply upon the increased blood pressure. Digalen can therefore be used without injury in cardiac affections complicated with nephritis.

Cumulative effects from Digalen are very rarely observed. Minder, who has given some hundreds of injections, has only seen one case of cumulative action.

The drug is not very toxic for the horse, the lethal dose being very high. In an experimental horse mentioned by Minder, death did not occur till 82 c.c. had been injected.

The *therapeutic* dose for subcutaneous and intramuscular injection is from 5 to 15 c.c. This of course depends upon the severity of the illness, the age and weight of the patient, and similar considerations. For young horses of medium weight, a dose of 7 c.c. to 8 c.c. is amply sufficient. The intravenous dose is 15 to 30 c.c.

Minder subjoins brief notes of several cases of pulmonary affections, in which acute cardiac symptoms appeared as a complication, and were successfully treated by Digalen. In all improvement set in within a few hours after the first dose, and continued throughout the following day; in none was it necessary to give a second injection within 48 hours of the first. In one case of unilateral pneumonia, a single injection of Digalen was sufficient to overcome alarming cardiac weakness.

While admitting that cases occur in practice in which Digalen seems to have no effect, Minder nevertheless concludes by recommending its use on the grounds of his own extensive experience. He lays especial stress upon its constancy of composition and consequent accuracy of dosage.—*Berliner Tier. Woch.*

[Minder appears to follow the practice of human physicians with Digalen in giving a large dose *intravenously* when an immediate and powerful effect is required.—Transl.]

Experimental Production of Atypical Cutaneous Tuberculous Lesions.

Gougerot and Laroche (*Archives de Méd. Experim. et d'anat. pathol.*) report experimental results upon guinea-pigs, which have considerable bearing upon human dermatology. By rubbing a culture of human or bovine tubercle bacilli upon the shaved skins of guinea-pigs, they have reproduced various cutaneous lesions observed in man which, although not possessing the typical structure of ordinary tuberculous lesions, are generally called tuberculides.

They have succeeded especially in producing papulo-necrotic tuberculides, characterised by small hard nodules necrosed at the centre. This papulo-necrotic nodule of the guinea-pig commences three weeks after inoculation by a more or less superficial dermic nodule, which becomes necrosed at the centre, The centre sinks and an ulcer appears which cicatrises slowly at the twelfth to the fifteenth week. A local tuberculous adenitis is often seen, and is comparable to the scrophulous adenitis of patients affected with scrophulides.

Most frequently, the papulo-necrotic nodule of the guinea-pig is histologically atypical and does not at all suggest the classic lesions of tuberculosis; nodules may be encountered, however, the histological structure of which confirms the tuberculous nature of the lesions.

These cutaneous experimental lesions, which are poor in bacilli, are often accompanied by hypodermic tuberculous lesions. The latter are always typical in structure, being formed by a collection of tuberculous follicles, with caseous centres, and containing giant cells.

By the same method of inoculation, the authors have obtained tense, smooth cutaneous nodules, without either desquamation, vesiculation, or necrosis, resembling the indurated erythemas of man. In these cases the derma was infiltrated with perivascular lympho-connective trains, without the formation of tubercles. In one case, however, there was a perfectly typical tuberculous centre, containing giant cells, *under* the skin, which showed the atypical lesions at its surface.

The authors have also been able to observe vesicular and hyperkeratosic epidermitis resembling eczema scrofulorum, the dry hyperkeratosis of lupus erythematosus, and sometimes the atrophic epidermitis of the latter.

It is noteworthy that virulent bacilli must be used to produce these lesions upon the skin of healthy guinea-pigs; attenuated bacilli fail to do so. The experiments suggest that human tuberculides may be due to the inoculation of virulent bacilli upon the healthy skin.—*Annales de Méd. Vét.*

The Physiological Rôle of Choline.

Extracts of various organs, when injected intravenously, exercise a *hypotensive* action, or in other words, cause a diminution of the blood pressure.

Gautrelet has previously stated his opinion that the hypotensive body common to these organs is choline, and has shown that in addition to being present in the liver, the nervous tissue, and the supra-renal capsules, choline is also found in the pancreas, spleen, ovary, kidney, and thyroid body.

In more recent researches, the same author has found choline in extracts of the parotid and submaxillary glands, the pituitary body, and the testicle. A number of physiologists have demonstrated that these glands possess a hypotensive action.

Brown, Joseph, and Guthrie have also found that an extract of bone marrow diminishes arterial pressure, that the hypotensive body is resistant to heat, and that it is antagonistic to adrenalin. Gautrelet has, therefore, sought for choline in an alcoholic extract of bovine bone marrow, and has found it to be present.

Similarly, a hypotensive body has been demonstrated in the intestinal wall, and Gautrelet has found that choline exists there. He has been able to demonstrate its presence not only in the extract of the duodenal mucous membrane, but also in that of the wall of the stomach. The mucous membrane of the large intestine alone does not contain choline, and its extract does not produce any fall of blood pressure.

From the author's researches, it appears that choline is found in those glands which possess a hypotensive action, and in those glands alone; and that when choline is precipitated from their extracts, their hypotensive action disappears. Injection of extracts from which choline has been removed by precipitation does not affect the blood pressure.

Choline thus seems to fulfil a very important physiological *rôle*. Gautrelet considers that the regulation of the blood pressure depends upon the co-operative antagonism of choline and adrenaline. —(*Annales de Méd. Vét.*)

W. R. C.

Reconstitution of the National Veterinary Association and Union of the Societies.

A meeting of the Committe appointed at the Harrogate Conference was held in Manchester on the 25th September to consider the suggestions received with reference to the provisional scheme submitted to the members of the Committee for their criticism. Dr. Bradley occupied the chair and there were present about twenty members of Committee.

The Committee considered each rule with its appended suggestions, and adopted an amended constitution, which the Secretary was instructed to submit to the Societies for their consideration. In order to permit of full discussion at the Society meetings it was decided that every member be supplied through the local secretaries with a printed copy of the proposed constitution.

The objects of the Association have been very considerably extended in order to increase the advantages of membership, and also with a view to making the reconstituted "National" a stronger influence for promoting the general interests and the advancement of the profession. They include the following:—

Holding periodical meetings:

Publication of the proceedings of the meetings and such other information as the Council may determine (it is proposed to issue free to members a periodical as soon as the funds permit):

Promotion of research in Veterinary Science:

Provision of occasional district lectures or demonstrations on the more important additions to Veterinary knowledge:

Establishment of Benevolent and Defence funds:

Support of claims of members to legitimate veterinary appointments:

It was proposed to add to the objects of the Association the investigation of professional grievances and disputes between members, and the regulation of minimum professional fees, but the Committee were not unanimous on these points, and they were left for the discussion of the Societies.

With reference to the establishment of Benevolent and Defence funds, it was agreed that great advantage would be gained if the existing benenevolent and defence societies joined the movement, but the present was not considered an opportune time to approach these Societies. The opinion was unanimously expressed that before approaching them the reconstituted "National" must be established on a sound footing, and have proved its stability and its desire to fulfil its extended obligations.

A good deal of discussion centred round the question of subscriptions; the original suggestion that the local Societies should be dependant on the central body for funds has been abandoned, and it is hoped that the arrangement proposed will prove acceptable to the local Societies, namely, that each Division shall fix the amount of the subscription to be paid by its members, the Local Treasurer forwarding to the General Treasurer a sum not exceeding ten shillings and sixpence for each effective member. The practical effect of this suggestion is that the local treasurers will collect the subscriptions to the National Association in addition to the ordinary local subscriptions.

The existing local Societies are to be made Divisions of the reconstituted National, and will presumably retain their present names. It is proposed for the present to group the Divisions together into three Branches, preserving the arrangement at present existing in Ireland which has worked with such advantage to the profession, and extending it to England and Scotland.

The independence of the local Societies has been maintained.. Subject to conformity with the rules of the National Association they are left free to govern themselves as they may deem proper.

It is most desirable that the Societies should take the first opportunity of discussing the details of the proposals contained in the suggested constitution. The Secretaries are requested to forward to the Secretary of the Committee any amendments which may be suggested by their Societies, after which the Committee will again consider the draft constitution, and as far as may be practicable incorporate suggestions which have been received.

A. Gofton, Hon. Sec. to the Committee.

EASTERN COUNTIES VETERINARY MEDICAL SOCIETY.

The autumn meeting was, in accordance with annual practice, held at Yarmouth on Thursday, September 9th, in the Royal Assembly Rooms, Albert Square. The President, Mr. H. P. Standley, of Norwich, first entertained the members and their wives to luncheon, at which among other visitors were the Mayor and Mayoress of Yarmouth. The members attending were Messrs. S. Smith, Lowestoft; W. Shipley, Yarmouth; J. Robertson, Stalham; W. L. Little, Yarmouth; J. Barr, Acle;

F. M. Wallis, Halstead; F. Fitt, Norwich; J. Cleveland Bungay; W. M. Reeman, Bury St. Edmund's; C. Holl New Buckenham; C. Palmer, North Walsham; J. D. Overed, Yarmouth; T. E. Auger, Wymondham; T. G. Heatley, Woodbridge; Beard, Postwick; F. L. Gooch, Stamford; J. K. Gooch, Holt; W. Waters, Blofield; F. B. O. Taylor, Weston; E. Margarson, Swaffham; Dr. Lowe, Wymondham; H. Low, Norwich; H. Wilkinson, Martham; T. E. Barcham, Paston; J. Simpson, Maidenhead; A. S. Auger, Saxmundham; Caulton Reeks, Spalding; etc. Most of these gentlemen were accompanied by their wives.

The following gentlemen sent letters regretting their inability to attend: Mr. A. Collins, Norwich City Engineer; Messrs. E. H. Leach, Prof. Penberthy, C. Nesling, H. F. Downe, G. Green, J. M. Livock, Sidney Villar, E. Kitchin, P. Simpson, J. J. Scott, J. Hammond, Prof. Almond, J. Bee, Sidney Smith, jun., H. Buckingham, Porrett, A. J. Cubitt, A. S. Hudson, Sir John M'Fadyean, G. Mayall, J. Buckingham, W. N. Jurgensen, J. F. Thurston, M. Bray, and P. Turner.

A Presentation.

After luncheon Mr. W. M. Reeman, Bury St. Edmund's as the senior Vice-President on behalf of the members, invited Mr. Standley's acceptance of a handsome double gold albert as a small memento of his six years' term of office as hon. secretary of the Society. During that period, Mr. Reeman said, Mr. Standley had devoted much time and energy to forwarding the interests of their Society, and it was in a great measure due to his efforts that it occupied such a flourishing position. When he relinquished his secretaryship a short time since, they thought that some slight mark of their regard should be offered him, with the result a gold chain was purchased, which he now had much pleasure in presenting to Mr. Standley as a token of their gratitude. When the annual conference of the National Veterinary Association was held at Yarmouth, Mr. Standley took a great deal of trouble to make it successful, and he had always been willing to help them in every way. (Applause.)

The President, in his acknowledgment, said it was all very kind but he feared that more than half of what had been said of him was not true. While he was hon. secretary he did everything he could to forward the interests of the Society, and the work was to him a real labour of love. He liked the work very much, and he was sorry when, for various reasons, he had to relinquish the office. He was very glad to find so excellent a secretary as Mr. J. Robertson, of Stalham, had been appointed his successor, and he promised to make a far better man.

The President next toasted "The Visitors," and said it was especially gratifying that the Mayor and Mayoress of Yarmouth were present, whose time was so fully occupied, especially during the season. Their autumn meeting was generally held at Yarmouth, and it was invariably the meeting of the year.

The Mayor said he was very glad to accept the invitation of their president, and especially to a veterinary gathering, because though he knew very little of veterinary matters he had for some years been associated with Mr. Shipley, who was in the profession. He supposed, too, that he had spent more time at the places of business now conducted by the President than Mr. Standley had himself. A few years ago he made a horseshoe at Mr. Pollock's forge, and as the 5th of November came round it was a great delight to him to make red flares on the same spot. He had also spent hours and days at his other place of business. He was glad to welcome any meetings or conferences of scientific men at Yarmouth, and also when they came simply for holiday purposes. He hoped the Society would continue to hold its autumn meetings at Yarmouth, and that the National Veterinary Association might soon again hold its annual meeting there.

Mr. J. Simpson, in thanking the President for his handsome hospitality, said the Eastern Counties Society was not a small or unimportant association, but one which had done important work. It had carried elections to the Council of the Royal College of Veterinary Surgeons. It was characterised by unity, and a ready response was always given when the members were called to arms.

The President, in reply, said that the pleasure of seeing so many ladies and gentlemen amply repaid him. The gift that had been made to him would always remind him of this happy time he had spent as their hon. secretary.

After luncheon a group photograph was taken by Mr. A. Yallop on the grass, and the business session followed, during which the ladies were enabled to enjoy an afternoon's delightful sunshine on the sea front.

The Late Mr. Fred Low.

The Hon. Sec read the following letter:—

"12 St. Giles, Norwich.

Dear Mr. Robertson,—Mrs. Low and family wish to thank the members of the Eastern Counties Veterinary Medical Association for their expression of sympathy and for the beautiful flowers they sent.—Yours sincerely,

Ethel Low."

The President, alluding to the sad loss the profession had sustained by the death of Mr. Fred. Low, of Norwich, who, he said, was one of their oldest members. He was esteemed all over the county, alike by his fellow veterinary surgeons and the public. He was a gentleman of the very highest qualities, and a veterinary surgeon of high ability. Everybody who had come in contact with him would deeply regret the loss. Whether they met him in business or otherwise, he was always the same, a gentleman of whom nobody could speak a bad word. He was a sportsman all over, and one of the oldest members of the Norwich Staghounds. Wherever he rode he always went straight, no turning round or looking back, and was always one of the first in the field. They all knew his capabilities as a veterinary surgeon, and it was with the greatest regret that he had to move that a letter of condolence be sent to his widow.

This was carried in silence, the members upstanding.

On the proposal of Mr. W. M. Reeman, seconded by Mr. A. S. Auger, it was also resolved to send a letter of condolence to Mr. P. Turner (Ixworth) on the recent loss of his wife.

The Hon. Sec. also read the following letter:—

"4 Vernon Chambers, Southampton Row,
London, W.C., Aug. 26.

"Frank Wragg Memorial Fund."

Dear Sirs,—Your very kind and sympathetic response to the appeal for this fund is to me a most gratifying proof of the very high esteem in which you held my dear husband, and I ask you to accept my heartfelt thanks for such generous recognition.—I am, dear sirs, yours sincerely, Alice S. Wragg."

New Member.

Mr. Robert Palmer, Norwich, having been nominated at the last meeting, was unanimously elected a member.

Annual Meeting.

On the proposal of Mr. Shipley, seconded by Mr. F. M. Wallis, it was resolved to hold the annual meeting in February at Norwich.

The R.S.P.C.A. and the Profession.

Mr. W. M. Reeman said he desired to refer to the action of the Royal Society for the Prevention of

Cruelty to Animals, and after they had heard him some of them might wish to modify their attitude towards it. An inspector of this Society stationed in his town came to him on a Sunday morning and asked him to go to a place with him in the afternoon. He did so, and found a mare suffering from canker which must have been of very old standing. The sole of the foot was completely gone and the wall had separated one-third of the way round. Whenever the animal took a step or two blood issued all round the coronet, and she was fearfully lame. This animal and two others were also suffering from a chronic form of skin disease and was in such a state that wherever the harness touched there was a mass of sores. The animals had left off work on account of this skin disease. He sent in his report and quite expected a prosecution would follow, but instead received the following letter :—

To W. M. Reeman, Esq., M.R.C.V.S., 7 Whiting St., Bury St. Edmunds.

Royal Society for the Prevention of Cruelty to Animals,
105 Jermyn Street, London, S.W.,
June 29th.

Dear Sir,—I am obliged by the receipt of your letter. The matter was very carefully considered before it was finally decided not to prosecute. The horse was destroyed when the Society interfered, as Lady —— said that she would not run any risk as to the horse suffering.

Lady —— has for many years taken great interest in the work of the Society, and her conduct in the past would certainly preclude the idea that she would have worked this horse if she thought there was any possibility of its being in pain.

Lady —— was brought up amongst horses and thinks that she thoroughly understands them, but she has now come to the conclusion that for the future she will not rely on her own judgment, but will always seek profeessional advice.

If the Society had taken proceedings, I am afraid the Bench would have come to the conclusion that Lady —— was guilty of an error of judgment, but nothing more, and that as the animal was destroyed, the proceedings by the Society were unnecessary and harsh.

It is extremely difficult in some cases to know what to do for the best, but I can assure you of this fact, that the Society conductf its operations without any respect to the person, or persons, involved, as the records of the Society will show. It may possibly be suggested that Lady —— position had something to do with the decision of the Society not to prosecute, but that is entirely erroneous.—Yours faithfully,

W. Fairholme, *Secretary.*"

Mr. Reeman added that this lady told the Inspector she understood more about horses than any veterinary surgeon living, and she stood over her man and watched him dress the animal. A gentleman driving past only a week before saw the animal at work and told the man to take it home or he would call in the police. He thought the Society rather gave the show away when they said the lady's position had nothing to do with it. He left it for the members to take any action they thought fit, but he did not see that they could do much.

Mr. F. M. Wallis said an Inspector of the R.S.P.C.A. asked if he would appear against a client of his, and he said he would if the facts warranted it. The inspector said there was a suspicious case of crnelty, but he never heard any more of it. The thing appeared to be hushed up, and the lady concerned was possessed of plenty of means, so it might have gone rather badly with the Society for subscriptions if there had been a prosecution.

Mr. J. K. Gooch said that many of the members would probably recollect his showing the bone of a cow in a case on which he was engaged some time ago. This cow had broken her femur, and he advised her immediate destruction. She belonged to a clergyman of the Church of England, and he left quite with the idea that the cow would be killed. Three or four days after he heard the cow was alive and being treated. Just nine months later the inspector came to him and said the cow was still alive and asked him to go and see it. He said his opinion would be the same. It was a very bad case and he told the inspector some action should be taken. He went down, but the owner then refused to have it destroyed, though the cow was a mere bag of bones. Two days after on pressure being brought to bear, the owner had the cow destroyed, and some of the members would remember the condition of the femur. It was broken about the middle, it had doubled back upon itself and kept together by an enormous amount of exostosis, of which he had photographs. That cow was allowed to live in this state for nine months, and he supposed because the owner was a Church of England clergyman no proceedings were taken. He was quite convinced that if it had been a poor farmer it would have been a very different matter.

He was told by his man not long since that a horse on the way to his place with contracted tendons had been stopped by the police, and it was taken back in a float. The owner would not go to further trouble and expense and it was destroyed. The Society did not prosecute because his evidence would have been rather strongly against them.

Last winter a doctor living six miles off was driving through his place when his horse turned up lame and a policeman ordered it to be stopped. The horse was taken out and put into the nearest public yard, the policeman refusing to permit it to draw the trap any further. The owner sent for him and he went and looked at it. The policeman said he should not allow it to be moved, but Mr. Gooch said he ordered it to be taken to his forge to have a nail drawn to prevent further suffering. He took the nail out and the horse became all right at once.

Mr. W. Shipley said it was a good thing to air these cases occasionally, though he was not sure they could do much good. He was quite certain the veterinary profession did not receive much consideration either from the R.S.P.C.A. or very often from the magistrates. Two clearer cases could not be placed before them than those which occurred in the Holt district. One was a noted pheasant case, where a man set a trap for a pheasant, and because he did not take it out was prosecuted for cruelty. Following on that one of the officers of the society went out, in his wisdom, to shoot a colt running on a common. Certain proceedings were taken but the case was dismissed, one of the most cruel things he had ever heard of. There was no doubt the society endeavoured to obtain convictions, and was frightened to take cases into court unless practically sure of a conviction. The consequence was that they invariably selected people who were unable to defend themselves. When a rich man was charged for an error of judgment there was invariably some loophole of escape. Only within the last few weeks a case occurred at Yarmouth which could easily have been said to be an error of judgment. A man turned some donkeys on the Denes or some common, and hobbled them with a piece of webbing, which is commonly done, but accidentally the coronets of one donkey became chafed, and the poor man was hauled before the magistrates and fined £2 and costs. If the society was going to take up cases like that, it wouldn't be a bad idea to go to some of the Yeomanry camps and see the horses hobbled there. It was well to air their views on the proceedings of the society, but he saw no good likely to come from approaching the society. They received all sorts of reports from their officers and acted on them, veterinary surgeons being to

a great extent ignored, unless the society had a difficult case and was afraid it would not get a conviction, but it did not often appeal to veterinary surgeons. He preferred to leave the society to fight its own battles, and did not think they should bother so much about it as they had done.

Mr. J. K. Gooch said he did not think they could do much good by approaching the R.S.P.C.A. In regard to the Sheringham case, he got a wire one afternoon to attend a horse that had been shot. He was out, but motored down late in the evening. When he got there he asked where the horse was, and found it lay up on the hills far away. The horse had been shot by one of the officers of the R.S.P.C.A., and as soon as he heard that he motored home again, telling the owner he would have nothing to do with it. Unless obliged he refused to have anything to do with these cases either for or against the society, as in his experience it was very unsatisfactory.

Anthrax, with Special Reference to its Post-Mortem Diagnosis by the Veterinary Practitioner.

H. Caulton Reeks, F.R.C.V.S., Spalding.

When approached by your President some few weeks ago for a paper I consented to place my services at your disposal. While, however, I found willingness to oblige come readily enough, I discovered that the choice of a suitable subject came only tardily. Anxious to avoid recondite matters, and desirous only of bringing forward something into which we could all enter, I decided to pen a few notes under the heading I have given. Omitting any lengthy description of the disease, its causes and symptoms, and taking these as more or less thoroughly known to most of us, I have simply based my remarks on the experience gained in my own practice.

Before entering on the subject matter proper, it will be well to make clear the ground on which we start. We are all agreed, I take it, that the disease is the result of the invasion of the blood stream by a bacillus—the Bacillus anthracis—and that such symptoms as occur during life, together with the indications offered post-mortem are direct issues of such attack. It is a matter of common knowledge to all of us, too, that the usual mode of infection in our patients is that of ingestion—that either at pasture or in the house food material contaminated with anthrax spores is taken into the alimentary system, and from there gains access to the blood stream—and that inoculation anthrax is a thing comparatively rare.

From this it follows, as is a matter of common experience, that the majority of our cases run a fatal and a rapid course, the rapidity only varying with the differing powers of resistance our respective patients offer to the disease.

In other words, the great bulk of cases the veterinary practitioner encounters are those in which death has occurred with some degree of suddenness, and in which it becomes a matter, not so much of what we can gather from symptomatology, as in what way we can best satisfy ourselves as to the cause of death.

After what we have already allowed as the cause of the disease, and seeing that any extensive post-mortem examination of the carcase is expressly forbidden by the Board of Agriculture regulations, it is evident than any method that will demonstrate in the blood the existence of the anthrax bacillus is the method the practitioner will take as satisfactory and useful.

Now there are four ways, at any rate, in which this may be done :—

(1) Examination of the unstained blood film with a high power of the microscope.

(2) Examination of the blood film, fixed, stained, and mounted in such a way as to render its examination easier than when unstained.

(3) Cultivation, from the suspected blood, of the bacillus on an artificial medium.

(4) Inoculation of a small susceptible animal.

(1) *Examination of the Unstained Film.* In this method a minute droplet of blood from one of the peripheral vessels is placed upon a slide, a cover glass is dropped upon it, and the droplet of blood squeezed into a thin film. It is then examined under the microscope for the bacilli. It is a rough and ready method I admit, but in cattle recently dead of the disease quite satisfactory to anyone who has made such examinations before. The bacilli present themselves as numberless, minute, transparent looking rods, floating in the plasma between the corpuscles, and the large number of them, together with their short appearance, their sharp-cut ends, and the absence of chains of any length, are all characteristics that offer a picture that is nearly unmistakable.

As a routine method it is not one I would recommend. It is quite excellent, of course, in a case where a positive opinion can readily be given. But in instances where the opinion has got to be a negative one, it would be far from safe to give a verdict on this method alone. As a means, however, of familiarising oneself with the appearances of the bacilli, and indicating what one is afterwards to look for and examine in the stained film, it is a procedure I would advise everyone to take advantage of in his early manipulations of suspected anthrax blood. When once seen it is a picture not readily forgotten, and forms an excellent standard on which to base calculations in future doubtful cases.

Side by side with this I have found it distinctly useful to accustom myself to the examination of films prepared from blood which I knew to be putrid. Such blood is often readily obtainable, and occasions offer in which death occurring suddenly from other cause than anthrax (*e.g.* death from lightning stroke) provides a blood in which malignant œdema bacilli present themselves to the almost entire exclusion of all others.

In the crude method we are describing, these and putrefactive bacilli may be distinguished from those of anthrax in that they are very manifestly less numerous, that they are larger, and that comparatively long chains are at once discernible. This, however, is but a stepping stone to the next method.

(2) *Examination of the Stained Film.* Here again a small droplet of the suspected blood is taken. It is placed on a clean slide, spread into a film, fixed in the flame of a Bunsen burner or a spirit lamp, stained and mounted.

For this purpose several stains are available, as the bacillus stains readily enough with all the basic aniline dyes. Far and away the best stain, however, is that introduced by Sir John M'Fadyean a few years ago, namely, a 1 per cent. aqueous solution of methylene blue rendered slightly alkaline by the addition of a half per cent. of sodium bicarbonate.

With this the film is stained for a half a minute to a minute, and then afterwards simply washed in water. This is all that is necessary, for the film may then be examined straight away, or may first be mounted with a small drop of xylol balsam and a cover glass if it is desired to retain it for some time.

The picture presented by an anthrax film stained by this method and examined under a 12th inch oil immersion objective is an excellent example of what experimentation in stains in the laboratory has produced for the aid of the practitioner. It is such that in animals recently dead of the disease, in cattle at any rate, a means of diagnosis is provided that is as nearly constantly reliable as the most fastidious could desire.

Not least among its advantages is the fact that it is quite easy to manipulate, allowing a large amount of latitude both in the process of staining and in the after decolourizing. Practical points to remember in order to obtain a perfect picture are : (*a*) to avoid over-heating of the film when fixing ; (*b*) to always filter the stain either just before use, or immediately on to the film.

These points attended to we are now in possession of a film which gives an appearance that is remarkably characteristic. No only have we the bacilli stained a deep blue, but we have also other elements in the film stained a pronounced violet or reddish purple.

On close inspection of such a film we find that the violet stained portions have some close connection with the envelope of the bacillus ; for while such violet stained portions are found detached from and plainly apart from the bacillus itself, we also note that the coat or envelope of the bacillus is traceable as a thin violet line immediately around the body.

This peculiar double staining reaction with alkaline methylene blue solution appears to be a characteristic of anthrax alone, and a film exhibiting it in marked degree may be diagnosed as anthrax with an amount of certainty almost approaching the absolute.

It is well, however, to remember that in doubtful cases we have an excellent auxilliary in the stain of Gram. Briefly stated, Gram's method is to stain with Aniline Gentian-Violet, and afterwards to decolourize with a solution of Iodine, finally rendering the decolourizing complete by treating with absolute alcohol or methylated spirit. It so happens that other bacilli which we are likely to meet with in this particular investigation, and which we are likely to confound with those of anthrax, are Gram negative—that is, they do not hold the stain in the presence of iodine, while the bacillus of anthrax retains it.

However, unless some little experience has been gained in the working of this method it is not easy. The decolourizing of the film is quite easily carried too far, for the bacillus of anthrax while distinctly Gram positive, still does not hold the stain quite so firmly in the presence of the iodine as do some other organisms.

Once, however, confidence has been gained in the manipulation of the stain and in the reading of its results, the worker in this field should always have it at hand ; for it will enable him to give a fairly decided opinion in cases where without it such opinion would be but tentative.

The mention of doubtful cases faces us with the fact that there are instances of undoubted anthrax in which, for reasons which we shall afterwards discuss, the bacilli in the blood have degenerated or have died off to the extent of rendering their detection with the microscope impossible. Nevertheless, it does not follow that even then a positive diagnosis is not to be had. The laboratory expert is able to place quite a number of such cases beyond all doubt and this brings us to a consideration of the two other means of diagnosis I have mentioned. They are strictly laboratory methods, granted, but involve so much of what even the practitioner should know regarding the biology of the bacillus that we should at any rate be conversant with the lines on which such final diagnosis is made.

Cultivation of the bacillus on an artificial medium. Of the several methods for doing this I select two, namely, (*a*) successive inoculation of a series of bouillon tubes : (*b*) growing on nutrient gelatine or agar in Petri's dishes or on glass plates—"plating out" as the method is commonly termed.

Although not an ideal method I take that of successive inoculation of a series of test tubes first, for the reason that it is quite simple, and will often, even in the hands of the comparatively inexperienced, give results that are excellent. I will assume that we have a sample of blood in which film preparations have demonstrated the presence of different kinds of bacteria, among which we suspect that of anthrax. In such a case we take the series (say six) of test tubes of bouillon, and with a small platinum loop inoculate one of the tubes with one or two loopsful of the blood. The platinum loop is then sterilized in the flame of the Bunsen, and tube number two inoculated in like manner from tube number one. Tube number three is then inoculated from tube number two, and so on until the series is complete. In each case the inoculated tube should be shaken in order to distribute the bacterial mixture in the medium before proceeding to inoculate the succeeding tube. The whole of the tubes are then incubated at the body temperature, and examined at intervals during the succeeding two or three days for appearance of growth. Tube number one will under these circumstances naturally exhibit a mixed growth, while, if care has been taken, the last one or two tubes of the series will in all probability be barren. Midway in the series we shall, if successful, get a pure culture of anthrax bacilli, which will be recognised as a feathery looking mass at the bottom of the tube.

In cases where the suspected blood has been exposed to the air, or under other circumstances where we are able to assume that sporulation has occurred, we can make this method a little more sure. While, when exposed to free oxygen, we know the anthrax bacilli to have sporulated, we may also fairly assume that, in a mixed infection such as we are dealing with, others of the bacilli are only in the vegetative form. We know further that the spores of a bacillus are far more resistant than are the vegetative forms to the action of heat. Taking advantage of this fact we raise the temperature of the first tube inoculated to boiling point for a few minutes before proceeding to inoculate the others from it. In this way, the bacilli present in the vegetative form only are killed off, while the anthrax spores remain intact. We are thus able, after incubation of the tubes to look with greater certainty for a pure culture.

The culture obtained, a small portion of it is taken out on the platinum loop, and from it a stained film preparation made as in the case of the blood. What we now see under the microscope (a mass of closely interlacing leptothrix filaments) is so abundantly characteristic that we are able at once to give a diagnosis of "anthrax."

The method of plating out is conducted on somewhat similar lines, the essential difference being that in this case the medium used is solid and not liquid. Here, again, a series of tubes is taken. This time three or four will be sufficient, and instead of the bouillon they contain gelatine. These are placed in a vessel of hot water, not exceeding 38 C., in order to liquefy the medium, and they are then inoculated in like manner as were the bouillon tubes. This done their contents are poured in a thin layer on to sterile plates of glass, or into Petri's dishes, the latter being the more convenient. Incubation of these is again carried out as before, and on the second or third day growth may be looked for, the separate colonies appearing as minute rounded points, around which the gelatine is slightly liquefied.

The whole dish or plate as the case may be, is then placed on the table of the microscope, and the colonies examined under a low power. Should anthrax be present among them we are fortunate again in that it exhibits appearances which render it easily recognisable. Around the centre is a light gray, shining mass consisting of numerous wavy bundles, the latter being likened by several writers to curling locks of hair.

When we find one of the colonies showing these characters we make what is called an "impression" preparation. A clean coverglass is dropped down upon the top of the colony, and afterwards, avoiding all sliding movement, lifted carefully away. There will remain adhering to it sufficient of the anthrax culture to give, when

stained and mounted, a faithful representation of the manner of growth of the bacillus under these conditions.

Under examination with a higher power it will be found again, as is the case with all cultures of anthrax, that the growth is composed of long filaments regularly segmented. The wavy locks of hair have turned out to be innumerable interlacing filaments of a wonderful delicacy of form and arrangement—the filaments themselves consisting of anthrax bacilli placed end to end without a break. Again, seeing that this mode of growth, that of closely interlacing filaments, is so characteristic of anthrax, we have no difficulty in coming to a diagnosis.

(4) *Inoculation of a susceptible animal.*—I now come to the last of the means of diagnosis I purpose mentioning. It is only in brief that I shall deal with it, as it is a method unavailable to the every-day practitioner. It is a pity, too (although some will perhaps disagree with me), that the vivisection regulations in this country are so strict, and that a licence is so difficult to obtain, for of all the methods of coming to some definite opinion regarding the presence or absence of anthrax in a sample of blood showing a mixed infection, this method (that of physiological separation) is by far the most delicate and the most convincing. All that is necessary is to introdace subcutaneously a little of the suspected material, previously mixed with a little sterile water or bouillon, taking as our subject one of the small laboratory animals, the mouse, the guinea-pig, or the rabbit. If anthrax bacilli are present then death occurs in from 24 to 48 hours (or a little longer in the case of the rabbit) and one has subsequently no difficulty in demonstrating by means of film preparations the presence of anthrax bacilli in the blood of the dead test animal.

We have now briefly considered the various means by which a diagnosis may be arrived at. It remains to discuss these with a view to deciding in just how far the average practitioner, handicapped by the want of a laboratory, should take advantage of them. For some years I have held the opinion that the practitioner, if only for the selfish end of adding to his own knowledge, let alone the more commendable instinct of advancing, so far as he is able, the dignity of the profession to which he belongs, should undertake such of these examinations as time will allow of and the law permit. This limits us to the method of blood film examination, and, regarding that, I hold my opinion still.

Difficulties and Disadvantages.

At the same time I am not blind to the fact that he will encounter difficulties. It becomes, therefore, a matter of weighing the advantages against the disadvantages; and, as a fair knowledge of one's limitations is a good "taking off ground" we will take the disadvantages first. There are several of them to consider.

Cases of anthrax in the horse, for instance, are bound, sooner or later, to prove a stumbling block to one who relies solely on microscopic examination of the stained blood film. While I have on occasions found the blood of this animal simply swarming with the bacilli after death I have, nevertheless, seen horses die from what I am perfectly convinced was anthrax, and yet failed absolutely to demonstrate bacilli in the blood.

Put shortly, I am convinced that microscopic examination of the blood, in the case of the horse, is unreliable as a means of diagnosing anthrax. In these cases, therefore, when the classical symptoms are well in evidence—more especially where the case has been under observation during life—I think it is the practitioner's bounden duty to diagnose "anthrax" on the clinical evidence alone, even should that diagnosis be flatly contradicted by the results obtained on examination of the blood film.

It must be borne in mind, too, that anthrax may occur in the horse with a total absence of such symptoms as are usually regarded as diagnostic, *e.g.*, swelling of the throat and the neck, accompanied with the pouring out of a gelatinous looking exudate. In place of symptoms such as these, with the disease running what is, for anthrax, a protracted course, we may have simply the exhibition of acute colic pains, with the animal plainly posting on to an early death. On premises known to be infected with anthrax no such case should be allowed to pass without some searching enquiry into the cause of death; and certainly the making of blood films should precede any attempt at a post-mortem examination of the carcase. In such instances failure to demonstrate anthrax will be met with often; but the proving to the hilt of only one such case will amply repay the conscientious practitioner for the trouble taken.

With the pig also I think the same difficulties lie in the way of obtaining reliable evidence from a microscopic examination of the blood. I must confess, however, to not having had much experience of anthrax in that animal.

A further disadvantage of the microscopic examination of the stained blood film is the difficulty offered when the carcase has lain long enough for putrefaction to commence. Under invasion of the blood stream by putrefactive bacteria the bacilli of anthrax, as we have said before, rapidly degenerate or die off altogether—their place being taken by the former.

This, of course, is due to the fact that the anthrax bacilli are ærobic, while those of putrefaction are anærobic. Robbed of its oxygen by the rapid multiplication of the anthrax bacilli within it the blood forms an excellent ground for the growth of putrefactive bacteria. These not only do not require oxygen for their growth and multiplication, but actually grow better without it. They, theretore, from their position in the intestine (a position they always hold) directly the blood becomes deoxygenized, commence to grow, and to multiply so rapidly that the bacilli of anthrax give way before them.

Personally, and in so far as the experience gained in my own district goes, I must say that this objection to the method does not carry a very great deal of weight. Cases of sudden death, in cattle at any rate, are quite early reported, and I can call to mind no instance in which I have not been called in sufficiently early to come to some reasonable conclusion as to the cause of death.

Reported cases will occur, however, that are not anthrax at all, and in the blood of which none but putrefactive bacteria or those of malignant œdema are present. But the man who has accustomed himseif to their examination should find no very great difficulty in coming to a recognition of their true nature. They are not nearly so numerous in the film as are the bacilli in a case of anthrax. Moreover, one is immediately struck by their greater length and thickness, by their evident inclination to form chains, and above all by the intensity with which they stain. The well marked envelope, so noticeable in anthrax, is here a thing hardly discernible, and the absence of colour reaction with methylene blue, although not a thing infallible, should also be taken into account. Finally, it will have been observed that the film considered as a whole, that is before placing it under the microscope, has not stained with the uniform density that marks a film of anthrax.

Briefly these are the difficulties in the way of the practitioner who, in suspected cases of anthrax, essays to base his diagnosis on the microscopic examination of a blood film of his own preparing. Now what are the advantages?

Advantages.

We will take first the case in which an ox is found suddenly dead, and the practitioner is called in early—say not later than 24 hours after death. Fortunately,

those are the cases, and those are the circumstances in which the practitioner is most often called in. I say fortunately, for in such instances the whole thing in the very big majority of cases is quite easy. Film preparations of the peripheral blood can be rapidly made, and a decisive diagnosis given with all speed. I have, in fact, conducted such examinations on the spot, and given a final diagnosis within ten or fifteen minutes of first viewing the carcase. I do not, however, advise this working in the field. Cases are bound to crop up where somewhat puzzling data have to be weighed, and the case considered from various standpoints before committing oneself to a definite opinion. This attitude of judicial summing up is not always correctly appreciated by the layman. He sees the hesitation, but not the line of thought behind it, and in such a case, instead of "method" reads into the hesitation "lack of knowledge." It is far better, therefore, to conduct such examinations at home where, with a better light, with a greater number of conveniences at hand, and with a little time in which to formulate an opinion, a verdict may be given that is at once decisive, and, at the same time, is one that will afterwards bear cross-examination.

Certainly, then, despite its disadvantages, disadvantages which once foreseen can in some measure be guarded against, the method of making film preparations in the cases I have instanced is one the practitioner ought to adopt. Especially should he do this if he happens to be employed by the local authorities as their inspector. He takes what is surely his rightful position in the case—that of leading adviser—and is able quite early after his visit to give an opinion. Those awaiting the verdict (the owner and the authorities) are quickly informed, and the case is rapidly and effectively dealt with. This, to my mind, is as things should be.

Just as an instance of the advantage it is to a practitioner to himself pursue this method I will relate a case that occurred with me last spring. Late one evening I was visited by a client who informed me that he had a steer ailing—that it had, in fact, been ailing for some two or three days. He did not regard the case as urgent, but "would I run out in the morning and have a look." I did so, and on my arrival found the steer dead, with a blood stained froth exuding from the nostrils and from the anus.

Now this was certainly not the history of a case of anthrax as ordinarily affecting bovines, where a history of a lengthy illness is a thing almost unheard of. Moreover, to my own knowledge there had not been a case of anthrax on that particular farm certainly since I had been practising in the district, and, so far as I could gather, not at any time prior to that. In all probability had I not been in the habit of making these blood preparations until it had become a matter of easy routine with me, I should have dismissed the idea of anthrax altogether, and the carcase would have been disposed of in the usual manner by the knackers. As a matter of fact I went so far as to tell the owner, the while I was cutting off one of the ears to take back for examination, that I certainly did not expect to find anthrax, but that I was simply making the examination in order to exclude any possibility of doubt.

To my surprise the stained film was one of the prettiest pictures of anthrax it has been my lot to run up against. The case was reported to the authorities and dealt with in the proper manner. Had I neglected this further means of examination I shudder even now to contemplate what the results might have been, for most certainly I should never have regarded the case sufficiently suspicious to forward an ear to one of the laboratories. The case would have gone undetected, and a very grave risk would have been run by some one or other who afterwards handled the carcase.

Assuming next that we are dealing with a case in which the circumstances are suspicious, and in which the history points significantly to anthrax, but where putrefaction is well advanced, should the practitioner, when the film examination fails him, attempt anything further?

Unless he has something more than an apology for a laboratory at his service, I should say no. Although I have on more than one occasion succeeded in obtaining pure culture from samples of anthrax blood that I have purposely allowed to become putrid, these operations have only convinced me that the practitioner would be ill advised in endeavouring to add to his methods of arriving at a diagnosis that of cultivation. It is far better in these cases to forward such material as he has for expert examination. Not only does the practitioner lack the laboratory conveniences, but he is more often than not unable to devote to these manipulations the time and the care they need. At the same time I can promise anyone who attempts and successfully carries out a few of these manipulations a very interesting piece of work and a very substantial addition to his knowledge of the disease.

The method of animal inoculation I need not mention again, save only to lament the fact that it is illegal. Our vivisection laws are a distinct embargo on research by the average practitioner, the man from whom, with his clinical experience behind to guide him, we might look in many cases for original work of a good class.

This, gentlemen, concludes my paper. With the time at my disposal I cannot claim that I have treated the subject at all exhaustively. And I have not attempted that. I have simply tried to pen a few chatty notes that I hope may lead to a useful discussion.

Discussion.

The President said he had listened to this paper with the greatest pleasure. The subject was one of very great importance to all of them, as they were all more or less engaged in country practice, and were very frequently meeting suspicious cases of anthrax, and it was very important that they should be able to determine by means of the microscope the existence or otherwise of the anthrax bacillus. Respecting the paper itself, he must congratulate his friend Mr. Reeks on its excellence and in his opinion it left very little room for discussion, although he felt sure amongst so great a number of members present some of them would probably be able to add some interesting information on so big a subject.

Mr. H. Low said that Mr. Reeks had alluded to a case that misled him considerably, and he might mention an experience he had. He received a telegram to visit a heifer taken ill. He went as soon as possible and found the heifer dead. He asked the cowman how long she had been ill and was told for three or four days, but it was thought to be only cake-sick, as they had been forcing her. A pint of oil was given, and it was thought the heifer would come all right. As she seemed better next day he was not sent for. On seeing the carcase he observed blood from the anus and froth from the nostrils, and advised that it should be reported, as it might be anthrax. This was done, an ear sent to Cambridge, and his suspicions confirmed. A day or two after a case was reported in his district. He went to the farm and said that anthrax was suspected and the farmer said it could not be, as the bullock had been ill for a week. He enquired what the first symptom was, and was told the bullock had been in the yard but did not fill himself with hay and roots as the others did. A drink was given, but the bullock got worse and was put into a box, where he died. He sent an ear to Cambridge and got a wire confirming his diagnosis of anthrax.

On another occasion a farmer came to him and said, what would you think if you had a lot of cows with a temperature of 107. He replied that he should think

they were rather ill. The farmer said his cowman told him one or two of the cows did not look very well and he took the temperature of a dozen which he found to vary from 105 to 107. He (Mr. Low) said he had better see them, and went to the farm where he took the temperature of 65 cows, and in 39 it varied from 104 to 107. Generally the symptoms were loss of appetite, though they were not absolutely off their feed, rumination taking place in the natural way. One striking symptom was the dropping off of their milk supply. From three or four gallons a day they dropped in 12 to 24 hours down to three pints. In all 48 of them had a temperature ranging from 104 to 107. Some came down to 101 and remained there, others came down to 102, and one went up again to 107. There were no deaths, so that he did not get a chance to make a post-mortem. The cows had been on pastures and he removed them to fresh grass, and then on to upland, but still he found the rise in temperature in cows which were not affected at the outset. Animals that were fat and a bull, kept in but fed on the same food had no rise at all in their temperature. He thought it must be a form of anthrax, but what it was he never discovered. One cow got so bad that she could not get up, but she recovered. He took samples of blood from two cows with a temperature of 106 and 107 and sent to a specialist, but he got a report from him that the blood was absolutely sterile.

Mr. W. SHIPLEY said they were all very much interested in this paper, though there was much in it that could not possibly appeal to them, because they were not in a position to carry out the advice given. At the same time his opinion was that every veterinary surgeon should endeavour by some means or other to verify his opinion by use of the microscope. It really resolved itself into a question of method. The method followed in Norfolk was one that might be adopted in several other counties. In cases of sudden death, where there was any suspicion of anthrax, they took good care to destroy the carcase first and find out what the animal died of afterwards. It was extremely dangerous to leave an anthrax carcase about. It was far better to burn forty non-anthrax carcases than to leave one affected carcase about. Some of the suggestions made would perhaps tend to leaving about a carcase that ought to be promptly disposed of. The diagnosis of anthrax was of course a little difficult. They frequently saw cases which from a clinical point of view they might consider to be suffering from anthrax. They were unable to find the bacillus, and in Norfolk had to send an ear to the laboratory at Cambridge, but the pathologist there never said anthrax not existing, but always wired "no anthrax bacilli found." That was pretty safe ground to go upon. Veterinary surgeons knew anthrax, and could tell their clients when they had it without finding the bacillus. It was most important immediately they had a case that was suspicious, or about which they had any doubt, to deal with it as though it were anthrax, in order to avoid any danger or trouble. The question of anthrax in pigs was certainly interesting because there were many cases they came across that were more or less suspicious, but it was a difficult matter to determine whether a pig is suffering from anthrax. It there were any local swellings they could depend upon the presence of the bacilli in the blood, but he thought it was rare that they found it. The cases cited by Mr. Low were very interesting. It was the experience of most of them that anthrax does occasionally exist without any serious symptoms, and in many cases without death occurring. It had no doubt been the experience of some, when a bullock had died in a yard from anthrax and they had taken the temperature of other animals that had been with it, they would find one or two with very high temperature. The method of dealing with anthrax carcases now is by burning, which seemed at first to be a very troublesome matter, but had now resolved itself into a very easy thing, and to him it seemed the best possible means of destroying a carcase. Some gentlemen had told him of the difficulties experienced at Birmingham, but in Norfolk it was quite a simple matter and the proper thing to do. They should impress upon their clients that while they are not able to say positively, the danger was so great that every precaution should be taken against its spread.

Mr. Low said that when they saw a carcase and suspected anthrax, if they took the temperature of other animals they would probably find some with rising temperatures. A farmer had two horses found dead on the pasture. He had seen them at eleven in the morning, and at three in the afternoon his man told him they were dead. They showed distinct symptoms of anthrax, and he had no doubt about it at all without any microscopic examination. There were several more horses, sixteen in all, and thirty bullocks. He considered it necessary to make an examination of the other animals, and out of the lot found twelve bullocks with a temperature varying between 105 and 107. Of the sixteen horses every one had a temperature that went up to 103 or 104, but there were no more deaths. They were moved from the pasture on to upland and all recovered.

Mr. J. D. OVERED said that in the cases of this high temperature, Mr. Low did not mention any treatment, or whether the animals recovered without medicine. He also seemed to suggest there might be numerous cases of anthrax in cattle which recovered and nobody knew anything at all about it. That was the opinion entertained by the late Mr. F. Low, but his own experience did not by any means confirm this. He might say that the largest loss he ever had on an outbreak amongst cattle had been when three died at the same time. More often there was but a single case. Now that facilities were given them for having cases tested by the microscope at Cambridge he quite agreed that the expert there should take the responsibility. Personally his time was so well occupied that he never had the opportunity to carry out details of the kind, and was therefore not loth to leave them to somebody. Whether he was right or wrong mattered little so long as the veterinary surgeon had an authority at his back. Anthrax he found rare in horses, but had had cases, and a comparatively large number of cases in pigs. In one instance he was called to a farm several miles from home where a man found one bullock out of twenty dead. There were a number of pigs with them. On the way from the home farm to the off farm he enquired as to the clinical symptoms of the bullock that had died. He was told he did not seem quite the thing in the morning and before he was left at night he was dead. He enquired what had been done with the carcase, and was told it was bled and sent to a butcher at Loddon! He told the farmer it was anthrax, and that half the pigs would be dead in 24 hours. It was so, and next day 14 were found dead. There were marked symptoms on the throat and head—very large swellings and pinky-white in colour. In horses he had generally found an enlargement of the head and throat, discharge from the nostrils, swollen tongue, cold, and exuding purulent mucous matter from the mouth. Death generally occurred in 48 hours.

Mr. F. L. GOOCH said that as a Norfolk boy he was very pleased to come amongst Norfolk friends. As to the paper, for which he thanked Mr. Reeks, he only wished that in the district in which he laboured they had the same regulations as in Norfolk, where they could approach any carcase, burn it, and give their opinion afterwards. He had experienced very great unpleasantness both from brother practitioners and also from the County Council where there had been a death. They were only allowed to touch a carcase in the district in which they were the local inspector. Some very hard

and even harsh letters had passed between him and the County Council on the subject, and some clients had taken upon themselves not to report a case—and unless it became compulsory they would not report. He could mention cases of anthrax which had spread through the neglect of the authorities to deal with it at the earliest possible date. He knew of one instance in which after notice had been given at 9 o'clock on a Tuesday morning, the carcase was not seen until Thursday.

The first method mentioned by Mr. Reeks, that of examining the unstained blood film with the microscope, was not the best method. Unless a veterinary surgeon had had great experience he would find some very confusing films. At the same time in all recent cases it might help in a diagnosis. He certainly agreed with Mr. Reeks that it should not be done in an open field. With regard to the next two methods, these were almost impossible, though not quite impossible to the younger practitioner, because he had had experience of it now in the laboratories of the College. As to the fourth method, the time at their disposal as local inspectors precluded it, because they were supposed to give an opinion as soon as possible; cultivation took 24 hours, and very often a longer period.

In cases of anthrax in pigs they would in 99 % get throat lesions. He had never seen a pig which had eaten anthrax blood that did not get throat lesions. He would ask Mr. Reeks whether he considered he would not get purple reaction with any of the methylene blues as well as that prepared in Camden Town by Sir John M'Fadyean? Sir John's was very good, but it was necessary to have the methylene blue well filtered. A great many in country practice did not do so much of this kind of work as they ought. A great many of them could not go through the post-graduate course, but he would like to go through it again. Everyone who wished to keep in line with the times would find it become necessary. If any of the proposed new laws were passed, and if veterinary surgeons were appointed, as they all hoped, the man who was not abreast of the times would go the wall. In Mr. Reeks' paper there was little to disagree with, and it should make everyone of them think if they could not in their own laboratories do some of the things at present being done by the different research laboratories.

Mr. A. S. Auger said he noticed Mr. Reeks had not said much about the cause of anthrax. He remembered being called to one outbreak among thirty bullocks pastured on the marshes. Two were found dead. The pastures looked good, but the stream from which they drank was dammed and it was supposed the bullocks had got some stagnant water. His treatment consisted of hyposulphate of soda, and tubs were placed about the pasture with plenty of fresh water. No doubt the cause in that case was the damming of the water supply. Perhaps water had a good deal to do with these outbreaks.

Mr. J. Simpson said Mr. Reeks had given them a very high class paper. Nobody could imagine, supposing they were unknown to him, that he could have graduated at the College and launched straight into country practice without having had an opportunity of acquiring the large quantity of information he had placed before them. In regard to the colour reaction, Mr. Reeks seemed to him to refer more to the colour reaction of the envelope than to the general film. To his mind, with the limited opportunity he had had of judging of the presence of anthrax or otherwise, the colour reaction of the film was almost distinctive between the anthrax bacilli and the putrefactive bacilli. He would like to refer to one of the Orders of the Board of Agriculture that no blood should be shed. There was a very improper prosecution of a qualified veterinary surgeon for having made a reasonable examination of a carcase which he suspected of anthrax. There was an appeal through the assistance of members of the profession, and that veterinary surgeon being properly defended the case was dismissed. He brought the matter before the Council of the Royal College in order that the College might petition the Board of Agriculture to modify its Order to the extent that no one but a member of the R.C.V.S. should be permitted to shed blood for the purpose of ascertaining whether anthrax did or did not exist, but inasmuch as the veterinary surgeon's appeal was upheld it was thought inadvisable to pursue it, and he was overruled, though he was strongly of opinion this should have been done, and still held that opinion. To say that a veterinary surgeon should not shed blood to the extent of cutting off an ear for the purpose of ascertaining whether anthrax did or did not exist was an insult to their profession. Of course, the majority of them, and he amongst them, had not had the opportunity of practising the experiments upon media such as Mr. Reeks had had. They constituted a long, delicate, and sometimes very puzzling operation, and for that reason the ordinary practitioner could hardly be expected to practise it. For that reason the specialist, who he was sorry to say occasionally misled them, was the man to apply to, and as Mr. Overed had said, they had someone to fall back on, upon whom the responsibility rested.

The post-graduate course was undoubtedly a right step. When it was first instituted he longed for the time to be able to devote to it. Now he had got too old, and there was no necessity for it, but he joined with Mr. Gooch in saying how very desirable it is to all veterinary surgeons who could spare the time.

With regard to anthrax in the horse, if they searched old veterinary papers and periodicals that were circulated amongst the profession they would find many cases of so-called violent colic which, if post-mortem examination had been made, lesions would have been found—the beginning of the gelatinous deposit, and so on. Although not recognised as anthrax in those days, there could be no doubt that every one of those cases was anthrax. He thanked Mr. Reeks for his excellent paper.

Mr. Reeks, replying on the discussion, said Mr. Shipley thought the methods be advocated for arriving at a diagnosis entailed the leaving about of anthrax carcases, but that was entirely opposite to what he had intended to convey. The whole trend of his paper had been to defend the practitioner who adopted this film method of investigation. It was quite simple, and given specimens of anthrax blood he would guarantee to put any gentleman who had never been able before in a position to do so in half an hour with the methylene stain. Once acquainted with the method of working, if a case cropped up, they would be able to diagnose it there and then. If a practitioner did it himself he was able to deal with a case at once. He was quite certain if they did not do it themselves it would be taken in hand by veterinary surgeons appointed by the Board, or it would get into the hands of medical men. He thought it the duty of every practitioner, whether young or old, to keep pace with this method of blood film investigation. In reply to Mr. Gooch, he did not think that Sir John M'Fadyean claimed to be the discoverer of methylene blue. He first noticed this reaction when it became alkaline on account of age. He got other methylene blues that were "young," and did not get the reaction in quite so positive a manner. He discovered the same result could be attained by the addition of a half per cent. of sodium bicarbonate. He had seen films which he could have sworn before putting them under the microscope were anthrax, which he found to be certainly not anthrax, and he did not think they could give a good opinion with the naked eye. The only thing they could say with certainty was that the film appeared to be stained much more uniformly and the colour

was of a uniform density. He quite agreed with Mr. Simpson as to taking off the ear. If they were not allowed to do that, what in the name of goodness were they allowed to do? He was once taken up very severely by one of the officials of the Board. If an ear was cut off, by the time the Board official gets down there is a considerable drip from the ear which may run to several pints. The official suggested to him that he should obtain some blood by a hypodermic syringe, and he then enquired what he was to do with the syringe. He had got over the difficulty by putting a ligature round the ear. They must have some of the blood, and a veterinary surgeon should be allowed to do this. He had no other means of arriving at a definite diagnosis. He also agreed with the remarks as to anthrax and acute colic. If they had colic on a farm where there had been anthrax they might look out. He had been to a farm where they thought a horse had acute colic or twist, but after death he found it was anthrax, much to his astonishment and annoyance. If ever he met acute colic where he knew there had been anthrax before, he always made an examination of the blood.

A vote of thanks was passed to Mr. Reeks for his paper, on the proposition of Mr. J. Robertson, seconded by Mr. F. M. Wallis.

The business meeting then ended, and the ladies joined the members for tea.

THE PROTOZOAN ORIGIN OF TUMOURS.

For several years past Dr. W. Ford Robertson, M.D., and Mr. M. C. W. Young, M.B., Ch.B., have publicly advocated the view that certain forms of malignant tumour are associated with the presence of protozoan organisms which determine the morbid proliferation of the cells. Their contentions are based chiefly upon the alleged demonstration of the parasites in the tissues by new methods, upon their cultivation, and upon the experimental production of carcinoma in mice by feeding with incubated carcinomatous fluid from the human subject.

These two observers gave a brief *resumé* of their work, illustrated by microscopical preparations and lantern slides, in the Pathological Section at the recent meetings of the British Medical Association at Belfast.

The parasites described by the authors are protozoa, having somewhat complex sexual and asexual life cycles, which are not yet worked out with absolute certainty in every detail. There seem to be numerous pathogenic species, distinguishable by morphological and other characters. One important phase in the life history is the appearance of minute rods or *sporozoites*, which resemble bacilli in appearance, but have little affinity for aniline dyes, and cannot be demonstrated in sections by the ordinary methods employed for the demonstration of bacteria in tissues. They are generally revealed by the palladium methyl violet method, one of the special staining processes practised by the authors. These rods display a remarkable chemiotactic affinity for the nuclei of tumour cells, which they reach and may even penetrate, breaking up into minute amœbulæ—the next phase of the cycle—within either the nuclei or the protoplasm of the cells.

As a rule, the authors use the palladium methyl violet stain only to distinguish the rod forms, though the succeding forms of amœbulae may also be seen with this stain. For the demonstration of the remaining forms of the cycle from plasmodium to swarm-spores—all of which are cyanide fast—they use a somewhat intricate ammonio-silver staining process of their own, decolorizing with cyanide of potassium, and contrast staining if necessary. This process requires that the tissues should be fixed with sublimate solution, the mercury being completely removed from the tissues after fixation in the usual manner, viz., by the prolonged action of iodine in alcohol.

For staining films of culture fluids, etc., methyl violet is the best stain, but the time required for its action varies with the phase of the parasite's cycle.

Sporoblasts, swarm spores, and sporozoites will stain in from five to ten minutes, but films must be stained many hours to reveal gametes and other stages of the cycle.

The authors' investigations upon the presence of the parasites in tumours have been somewhat hampered by not always having suitably fixed tissues at their command. Nevertheless, a good many tumours have been obtained which had undergone sublimate fixation, and in these the parasite has been demonstrated. One of these tumours was a specimen of Jensen's adeno-carcinoma of the mouse, which was obtained from Professor Jensen himself. This showed nearly all the phases of the parasite, the gametes especially being present in very large numbers, chiefly within the protoplasm of the tumour cells, and very often in cells undergoing division. The other tumours which contained the parasite include squamous epithelioma of the lip, eucephaloid cancer and scirrhous cancers of the breast, sarcoma of the chest wall, and the infective sarcomata of the dog. The parasites of the last-named tumour show somewhat special morphological characteristics, and therefore appear to be a quite distinct species.

The authors have also endeavoured to ascertain whether the bodies revealed by their methods in sections of tumours can be seen in cultures and in fluid from cases of malignant pleurisy and malignant peritonitis, especially after incubation for various periods. Pieces of carcinomatous or sarcomatous tissue have been incubated in culture media (either agar, or sheep's serum diluted with normal salt solution) for periods varying from eleven days to four weeks, after which the media were found to contain the parasites in various stages of their development. Similarly, peritoneal fluid from a case of malignant peritonitis was incubated for four weeks and proved to be bacteria free, while its centrifuge deposit contained some forms of the authors' parasite. In no case, however, have all the phases of the parasite's cycle been recognised in a culture, though one—an agar culture from one of the experimentally produced mammary carcinomata of mice which will be referred to immediately—showed every phase of the cycle except the rods.

Lastly, the authors have made one attempt at experimental transmission, with notable results. Thirty mice were fed with fluid from the pleural cavity of a case of malignant pleurisy, secondary to scirrhous carcinoma of the breast. This fluid had been incubated for about seven weeks. In the course of the next fourteen months seven of the mice developed tumours as follows:—three mammary carcinomata, two carcinomata of the lung, one of the testicle, and one of the uterus. The parasites in these experimental tumours were morphologically identical with those found in the scirrhous cancer of the human breast, and differed in some respects from the organisms discovered in the adeno-carcinoma of Jensen. In Jensen's tumour, the gametes are larger and more richly branched.

The authors' work is not yet complete, and the account of it given at Belfast was necessarily far from being exhaustive. Nevertheless, it is well worth following.

DISEASES OF ANIMALS ACTS 1894 TO 1903, SUMMARY OF RETURNS.

Period	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Counties Affected		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Animals Attacked		Out-breaks	Out-breaks.	Slaugh-tered *
GT. BRITAIN. Week ended Oct. 2	23	28			8	32	Hants	1	5	16	130
Corresponding week in 1908 ...	15	19			8	61	Kent	1	2	25	224
Corresponding week in 1907 ...	18	39			12	22			3	34	206
Corresponding week in 1906 ...	21	29			24	39	London	27	2	16	75
Total for 40 weeks, 1909	1012	1339			434	1547	Middlsx.	2	481	1339	12114
Corresponding period in 1908 ...	835	1111	3	112	643	1993	Sussex,		649	1618	9624
Corresponding period in 1907 ...	846	1133			679	1547	East	1	424	1995	9418
Corresponding period in 1906 ...	699	1001			849	1588			309	864	4884
Board of Agriculture and Fisheries, Oct. 5, 1909.							Parasitic Mange				
IRELAND. Week ended Sep. 25	...	...	...	...	...	...	...		2	...	48
Corresponding Week in 1908 ...	...	...	...	...	...	...	1		4	...	...
Corresponding Week in 1907 ...	...	...	...	...	...	...	2		4	2	37
Corresponding Week in 1906 ...	...	...	...	...	...	...	3		4	...	2
Total for 39 weeks, 1909	6	6	...	...	...	...	67		309	86	1554
Corresponding period in 1908 ...	7	10	...	...	...	...	33		281	141	3247
Corresponding period in 1907 ...	2	4	...	...	5	9	67		199	120	2078
Corresponding period in 1906 ...	3	7	...	...	6	14	72		171	81	914

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 29, 1909.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

ROYAL VETERINARY COLLEGE.

The 1909-10 Session of the Royal Veterinary College, Camden Town, was opened on Friday, October 1, when Prof. G. A. Buckmaster delivered an Inaugural Address. The Chair was occupied by Lieut.-Col. Queripel, and amongst those present in the large audience were Sir John M'Fadyean (Principal of the College), Sir Thomas Elliot; Major-General F. Smith, C.B.; Colonel Steel; Colonel Walters, Captain Queripel; Professors Macqueen, Shave, Woodruffe and Wooldridge; Messrs. Almond, Banham, F. Bullock, Roger Clarke, H. A. MacCormack, Chamberlain, Dawes, W. J. Mulvey, Reid, Roberts, Rice (Toronto), Rowe, Samson, Sheather, Slocock, Stockman, and Thatcher.

In introducing Professor Buckmaster,

The CHAIRMAN expressed his pleasure at being asked to preside over a meeting of the College from which he had graduated.

Professor BUCKMASTER then delivered the following address—

Mr. Chairman and Gentlemen,—It is with pleasure that I follow the traditional custom of those who have preceded me in former years, and on behalf of the Governors, the Principal and Professors of this College offer a most cordial welcome, both to those who come amongst us for the first time to-day as well as to those whose presence here is evidence that they continue to take a warm interest in this Institution, which both by its history and by the work which it has accomplished occupies a foremost position in the country. It is fitting that to all our students both old and new this welcome should be particularly extended, for it is to them that we look to uphold the status of the veterinary profession, and by an active interest promote the welfare of this College.

Now, through no fault of my own, I happen to be in a position where I cannot speak either with much knowledge or authority on matters which closely affect the veterinary profession, and the nature of my work during the few months that I have had the honour of being connected with this College precludes a very intimate acquaintance with the various problems which confront the profession.

It is doubtful whether there has ever been a more favourable opportunity than the present time for those who propose to commence veterinary work and avail themselves of the unrivalled opportunities afforded in this College, and there are certainly no sufficient grounds for the somewhat pessimistic views which from time to time I have heard expressed as to the gloomy outlook that exists for those about to enter the profession; neither does there appear to be the slightest probability that the whole race of veterinary surgeons is about to be subjected to a process of painless extinction.

Apart from the actual treatment of disease in animals, an equally large field lies open to the veterinarian in what may be considered the furtherance of preventive medicine considered in its widest sense, and the attitude of the more enlightened portion of the public, who unfortunately do not necessarily rule us, towards the aims of veterinary surgeons shows that they are quite aware of the dangers which may arise to the community from diseased meat or from the transmission of bovine tuberculosis or other diseases communicable to man either by meat or milk. I mention only two of the diseases which either directly or indirectly are known to be communicable to man by animals. Fortunately from our point of view the public (and it is to them that all professions must look for the means of existence) are imbued with a wholesome fear of germs and bacteria. Their bacterio-

logical knowledge if fearful is also wonderful, and just as the physician now finds in almost every private house a complete pharmacopœial outfit of drugs in tabloid form, so it is far from uncommon for him to have to listen to a considerable amount of undigested information about the bacterial origin of disease. Some daily papers may indeed be considered to be among our best friends, for they keep a somewhat credulous public alive to the dangers of adulterated or contaminated food, and it is in the matter of the supervision of the milk and meat supply that an extended sphere of utility lies before veterinary surgeons. For I take it for granted that those whom I am addressing hold firmly to the view that the trained veterinary surgeon is the proper person who should, by reason of his special knowledge, be qualified to give an opinion as to whether an animal intended to be slaughtered for food is healthy or not, and it is a reasonable demand that in any efficient system of meat inspection all animals intended for food should be passed by an examination which is conducted before as well as after slaughter.

The supervision of our milk supply, we also maintain, should be in our hands. It is true enough that pure milk easily, and indeed frequently, becomes contaminated after milking, and therefore becomes a source of danger to the community, but even if it is conceded that contamination most frequently does occur owing to the proper want of storage in the poorer class of town dairy and in the dwellings of the poor, this in no way invalidates the scarcely credible fact that the owner of a cow which is in the most advanced stage of tuberculosis and exhibiting obvious signs of udder disease may, simply for gain, sell the milk of such an animal for human food, so long as the sale has not been stopped on the certificate of a veterinary surgeon.

Till within a short time ago the greatest difficulty before the London Health Authorities in their campaign against tuberculous milk has been that although they possess the power to condemn such milk when found within London, they have no authority to enquire into the health of the cows supplying the milk, if these cows belonged to farms situated without the County of London. In order to overcome this difficulty, as many of you probably know, a special veterinary inspector has been appointed to examine such cows and to stop the supply of milk for human food when an animal suffers from tuberculosis of the udder. It is probable that about 2 per cent of the cows now furnishing milk in this country are affected with tuberculosis of the udder. At present the London County Council has no authority to deal with other forms of tubercular disease, but when the recently issued Tuberculosis Order comes into operation, local authorities will be required to enforce the Order to slaughter not only cows suffering from tuberculosis of the udder or cows giving tuberculous milk, but also all bovine animals which are emaciated from tuberculosis. As to details of the work of the veterinary inspector during the past year, 372 farms scattered over thirty counties were visited. About 10,000 cows were examined; 260 or 2.6 per cent. were found to have tuberculous udders, and of the 1,217 samples of milk examined 157 or 12·9 per cent. proved to be tuberculous. In the words of the Chairman of the Public Health Committee, "The work of the past year has successfully advanced the good progress of the Council" in their campaign for a pure milk supply. In previous years it was only possible to discover at much cost, and after weeks or months of work, that a given sample of milk taken in London was tuberculous; now, even if it is impossible to stop completely the milk of a tuberculous cow from being sold, we can at least see that such milk does not come to London for sale.

Now these questions of meat and milk supply, or rather of meat inspection and dairy inspection, vitally affect everyone, and we must continue to claim that in this matter the best interests of the community will be served by the competent veterinary surgeon. I agree entirely with Prof. Wooldridge, who, in this place last year, advocated either the creation of some definite Diploma in Public Health, or the granting of an additional Certificate which shall show that, apart from the subjects of the ordinary curriculum, which of course now includes a training in meat inspection and veterinary pathology, a veterinary surgeon has made a special and extended study of these subjects. I would advocate the creation of a special Diploma, which should bear the same relation to the ordinary veterinary degree that the existing D.P.H. does in the medical profession, where a special post-graduate course lasting over six months must be followed, a course which is very largely practical rather than theoretical. I remember quite well that this diploma was at first not much coveted. For instance, in my own case in 1887 I was the solitary candidate, and was examined at Oxford for six consecutive days by six different examiners, and I need not tell you here that this in itself did not tend to make the degree very popular. If I might venture to throw out a suggestion to-day, it would be that the veterinary profession should not wait, but that they should prepare for what beyond question is certain to arise in the future, namely, a demand by the public authorities for specially equipped men to give their whole time to the subject of preventive veterinary science. I would here express the hope that at no distant time there will be established a Veterinary Service of Public Health, which will stand in the same relation to veterinary surgeons that the D.P.H. does to medicine, and that some additional distinction either in the way of a Diploma or Certificate, preferably the former, should be granted by the Royal College of Veterinary Surgeons. Among other considerations which have led me to refer to this question is one which is sufficiently obvious. For in the veterinary, as in the medical profession, of those students who propose to enter it there are various groups. First those who never get qualified at all, and in my time (I will not say at which medical school) these formed about 15 per cent. Amongst those who did qualify, the majority were obviously fitted for active practice, but others there were who, by the bent of their minds, were chiefly concerned in the purely scientific side of medicine, and it was from this group that the larger number of those who took the D.P.H. was recruited, and I have no doubt that of those at present engaged in veterinary study the same differences exist. In other words, a student may elect actual practice or prefer by laboratory study to qualify himself for the more special work of veterinary hygiene. In the latter case it seems only a fair demand that for the additional time and study which is devoted to this matter, students should receive some distinctive Certificate or Degree.

Now the success with which a profession is practised, the status which it holds, and the estimation in which it is held depend largely upon the loyal co-operation rather than the competition of its members, but the actual advance of either the medical or veterinary profession depends by no means upon the individual ability of those engaged in the practice of it. I am unwilling for a moment to in any way attempt to minimise or belittle the practical side of our profession, but it is owing to experimental work, much of which is of necessity carried on in laboratories, that we must look for those additions to accurate knowledge without which no progress is possible. It is true enough that there is a somewhat unfortunate tendency for a man engaged in particular work to absurdly overrate its importance, or consider that his own researches are, to the exclusion of everyone else's, of peculiar interest to the whole world, but when all allowance is made for these foibles there remains the undeniable fact that the whole laboratory output of the world is an expression of the desire for

knowledge. The relation of scientific work to our profession I always think is represented by three sets of strata laid down at a river's mouth—the old deposit which has consolidated and become the basis of our knowledge, the overlying accumulation which represents what is largely destined to thicken the lower part on which it lies, and the material which is just deposited on the top. This last represents recent work, but it is clear that the gradually formed deposit of accepted knowledge must be of greater intrinsic value than the latest discovery or newest theory.

By the consent of those who from their knowledge are alone capable of forming an opinion worth receiving, the claims of scientific research rest upon the clearest evidence. The inductive method is in its nature a matter of observation and experiment, and among other questions is this one, whether the nature of experiments should be of a popular or scientific kind. By popular experiments I mean those which are made on a large scale on human beings, as where a contaminated water supply, milk supply, or meat supply has been administered to the community. As types of scientific experiment I will instance those of Gerlach, of Hanover, who in 1871, many years before Koch's discovery, ascertained by laboratory experiments that bovine tubercle could be communicated to animals by flesh or milk. Without troubling you now with details I feel sure that anyone who claims the faculty of understanding the work not only of those who created the study of bacteriology, but of those who have so greatly extended it, must be convinced that this is due to an intimate knowledge of laboratory method and technique. I would add that, though it is only two years ago since for the first time in its history this College received any grant which would enable it to carry on its work apart from what was received by donations, subscriptions and fees, that much more aid would be gratefully accepted. I contend that the whole research work of both the medical and veterinary profession should be financed by the State. As to the possibility or even probability of this we may have doubt, but that it is a profitable investment for any State to finance original research work by the equipment of laboratories and by retaining the services of those who are capable of using laboratories I have no shadow of doubt. It is known that in Germany nearly £60,000 is devoted to the purpose of veterinary education; in France it exceeds £40,000. In this country it is an amount which, though most acceptable, may be regarded as minute when compared with the sums I have just mentioned. Now in common with many others I feel that though in this country vast sums are expended in education, the claims of research are almost ignored. With the exception of £4,000 placed at the disposal of the Royal Society and some small grants made by the Local Government Board, nothing whatever is done in this direction. That the expenditure by the State of some of the money of the people is a most wise investment I will prove by availing myself of the information I possess about Germany, a country which, for an Englishman, I know fairly well, not from occasional visits but from a lengthened residence. I will also put this information before you in the simplest form, and the burning questions of Free Trade, Tariff Reform, or Protection you will see are entirely without influence in proving my contention that a wise State fosters its scientific industries, and supports those to whom it looks for the advancement of knowledge. The yearly output of the chemical industry in Germany was £47,895,000 in 1897, and at present it may be estimated at £60,000,000, of which £20,000,000 worth is exported. The entire manufacture of alizarine and almost the whole of the artificial indigo, potassium cyanide and aniline dyes is in the hands of Germany. Further, whereas in 1840-1850 about 9,000 tons of beet sugar—the yield of sugar from beet being 5·72 per cent.—was produced, in 1905-6 2,400,771 tons of sugar was produced, and the processes for obtaining the sugar had raised the yield to 15·27 per cent.

Now I am aware that figures are not easily assimilated by an audience, but I have mentioned these for a purpose. The history of the chemical industry dates entirely from the time of Liebig. There was no chemical laboratory at all until 1825. This one at Giessen, where Liebig's life was passed, was succeeded at a long interval by one in Marburg in 1841 and in Leipzig in 1843. The German Governments of those days were won over to the cause of chemistry by Liebig's agitation for the creation of laboratories and by his numerous popular writings. Henceforth assistance came readily from all quarters of Germany; laboratory followed laboratory, and the State provided money with a liberal hand for the advancement of chemical knowledge.

This is, to my mind, the important point which I would wish to urge you to remember. The State neither waited for individual enterprise, nor for private munificence, nor did they enquire whether an immediate result would be seen. They were simply convinced that the study of chemistry might be beneficial to the State, to the nation, and they considered it a duty to spend some of the money of the nation on chemical research, and did not refuse to listen to the legitimate demands of scientific men on the plea that it was not the business of a State to exercise foresight. Without the help of the State, the growth of chemistry and its application to industry must have been crippled. Quite apart from other examples, it is sufficient to state here that the beneficial effect of chemical research applied to industry is clearly evident in German agriculture, where the results of studies and experiments conducted in laboratories is universally applied both by peasants and landed proprietors. Both the production and the utilisation of artificial manures in Germany I can assert is unparalleled by anything at home. In this country the claims of science and therefore of medicine and veterinary medicine appeal to no political party, but feeling as strongly as I do that some of the nation's money would not be thrown away by State endowments which should lead to the better equipment of existing laboratories, and furnish grounds for researches which cannot be undertaken single handed but requires a trained army of workers, I trust I am in accord with the views of those to whom I am speaking, that it is most desirable that such a demand as this should be expressed.

Many of these reflections have from time to time come to me when, among other things, one realises that the subject of veterinary physiology is all but undeveloped compared with pathology. The former is all but non-existent. Almost the only original work in purely veterinary physiology in this country we owe to one who is well known in this College, Col. Fred Smith. For the innumerable questions which arise in the histology or physiology of the domesticated animals, recourse must must be had to Continental authorities, and even then it is difficult to obtain accurate information. In my opinion a vast field lies open for research in veterinary physiology. I have thought that perhaps it might have been of interest to briefly describe some recent work which has a bearing in veterinary medicine, such as the extended researches of E. S. London, Abderhalden, Oppler, and Sanderg, who, during the last five or six years, have specially studied the processes of digestion in various animals by experimental methods which were originally perfected by Pawlow; but I do not think this would equal in interest the quite remarkable work of Payr, of Grátz, Stich, and Makkas in Breslau, MacClure, Hoepfner, and Alexis Carrell, who by their perfection of methods for suturing blood vessels have succeeded in the realisation of what must doubtless have been a very old idea, the replacement of diseased organs by sound ones. The successful performance of such operations was, however,

completely frustrated owing to the lack of a method for uniting vessels so that a normal circulation could be re-established. The feasibility of the grafting of one vessel on to another depended on the development of the technique.

With your permission I would briefly refer to this work, most of which, I may point out, has been done by men who are, together with those who assist in the laboratory, sufficiently paid for their work, which has also been conducted in endowed institutions.

It was a dogma for years that thrombosis was the necessary consequence of a vascular suture. This is not true. Arteries can be joined either by invagination and suture, or by using a magnesium tube, as in the experiments of Payr. But the best result in joining two vessels is obtained by bringing the interior of both arteries together and using a circular suturing. The result of such experiments is durable.

A cross anastomosis of the carotid artery and jugular vein can be established, and the animal remain alive for over three years. Or the carotids can be cut and joined up transversely, the central end of one to the peripheral end of the other, and in sacrificing the animals a year later it was evident that neither was there thrombosis nor alteration in the calibre of the vessel; a ring-like scar devoid of elasticity was alone noticeable.

With regard to the transplantation of vessels, Carrel, among other cases, instances the transplantation of a segment of aorta into one dog from another, and of a segment of carotid into the carotid. In histological appearance, nine months later, it is practically impossible to find any differences between the normal and transplanted parts, and since eight months after the operation of interpolating a segment of jugular vein into the carotid the transplantation of veins into arteries must be admitted a possible, though difficult, experiment, heteroplastic transplantations may also be successful, a fact one might at first hesitate to believe likely. A segment of the human popliteal artery from an amputated limb has been transplanted with success into the aorta of a dog. The vessel, though one might expect it, did not undergo cytolysis. Histologically the muscle fibres go, and the hetero-plastic tube is one of connective tissue. If these results are remarkable, those in the transplantation of organs are still more so.

The results of Halsted in transplantation of the parathyroids, and by Bush and Smieden in the transplantation of the suprarenals, show that the graft of these small bodies by simple implantation is efficient. In 1896 Knauer published the results of his ovarian transplantations. The ovaries were implanted in the peritoneal cavity. Three years later he found the grafted organ normal from the histologic standpoint, and of the animals experimented on two became pregnant. Guthrie made identical experiments on chickens, which are much easier to operate on than mammals. His results were excellent, and he obtained offspring from the grafted animals.

Dogs with grafted spleens can live for years, and animals have survived for over four months after extirpation of both kidneys and replantation of one from another dog. In this operation the ureter is not cut, but a piece of the bladder is grafted at the same time on to the bladder of the other animal. Finally, it has been demonstrated that the leg of a dog may be removed and substituted for the corresponding leg of another dog, muscles, bones, blood vessels, being all sutured together with aseptic precautions, and the whole placed in plaster of Paris. Twenty-two days later the temperature of both limbs was the same within one-tenth of a degree, and there was good union of vessels and skin and muscles; the bones were not very strongly united, but that the grafting was successful in clear.

Whatever is destined to be the future of this work, it has, at any rate, demonstrated beyond any question that thrombosis does not necessarily follow the transplantation of vessels, and that the excision of arteries and retransplantation are possible operations. Even the replacement of an organ such as the kidney, which is known to be so exquisitely sensitive to temporary interference with its blood supply, can be wholly transplanted from one animal into another.

Into the ethical side of the question, as to how far the experimental methods of physiology are justifiable, I do not propose to enter. I take it that each one of us individually, either has already done so, or will at some future time settle this question for himself with his own conscience. There are no short cuts to knowledge, though there may be one to a superficial kind of learning. The permanent additions to our knowledge made by all sciences, and especially by those who have so markedly influenced the progress of medicine, incontestably have originated from properly directed experimental work. In fact, we no longer listen with any toleration to those whose guesses at causes or whose haphazard ideas are put forward in place of knowledge derived from the logical sequence of evidence built up by experimental research. In the fields of observation chance only favours the mind which is prepared.

To those students who come amongst us for the first time to-day I believe I am expected to particularly address a few words. In a sense we are all students, and must ever remain so. But I would hope that most, or indeed all, of you who are proposing to enter the profession are under no delusion that your work will be light, or that it can be done in any careless or thoughtless way, and examinations passed with a minimal amount of knowledge. For this is not so. Compared with all other professions that of medicine is the most exacting, but as a recompense it is probably most satisfying to the minds of those who have been prompted to enter it by inclination rather than by accident. Unless you propose to earnestly pursue the work which lies before you with thoroughness and with a genuine love for knowledge, much of your time will be wasted, some part also of your life. Cultivate the habit not only of reading but of thinking for yourselves, for this is to endeavour to develop a coherent set of ideas, in fact a system, even if it be not a complete one. There is an unfailing test of the man who not only reads but thinks, for the working of his mind is distinguished by a character of decision, and in consequence his converse with his fellows is marked by lucidity and clearness. There is an infallible sign of such a mind, and it may be known by the directness of its judgment. Only with maturity of knowledge and experience will there be maturity of judgment; therefore this is a question of time and cannot be developed at the outset of your work. I am not going to weary you with good advice, but I would urge perseverance in work, reliance on your teachers, and the preservation of an honest love for the profession you have adopted. Each one of us should remember that we are not isolated units, but members of a community, actual or prospective members of a profession, the influence of which in the country, the opinion in which it is held, and its status depend largely upon the loyalty of its members towards one another. May I add that nothing is more helpful towards the maintenance of a high level of conduct and the avoidance of what is mean and contemptible than to keep before one a high standard of attainment. The attempt to acquire this is within the reach of all, and the striving for this will make for success, and thus redound to the welfare of this College.

The CHAIRMAN, in proposing a vote of thanks to Professor Buckmaster for his very able and instructive address, said the profession had great need of State assistance for its colleges and schools, and he hoped it would not be long before that assistance was obtained. The Governors of the College had now to scrutinise care-

fully every item of expenditure in order to make both ends meet, but had never spared any expense in equipment or in those things necessary to the welfare of the students. For the teaching staff, however, state aid was very necessary. He urged upon the students devotion to their teachers and their studies. They were entering a noble profession and one which, to an earnest student, offered many opportunities for advancement. Was there, he asked, any profession which for its size offered the same advantages as did the veterinary profession? First there was the Army Veterinary Corps, in which young men might find a congenial sphere for the exercise of their life work. Then there was the Indian Civil Veterinary Department, prepared to absorb men ready to devote their lives to special training, and giving ample scope for research work. India was a great field for scientific work and a great sporting country for recreation. Other appointments open to the profession were to be found in the Colonies, and in Great Britain there was work to be done under the County Councils and the Board of Agriculture. The backbone of the profession, however, was the private practitioner, whose work on behalf of the agricultural community was of great import. He urged the students to repay the devotion of their teachers, especially their Principal, Sir John M'Fadyean.

The vote of thanks was carried with acclamation.

Sir JOHN M'FADYEAN then read the list of medals, class prizes, etc. as follows :—

LIST OF PRIZES.

Coleman Prizes : Silver Medal—B. H. Mellon ; Bronze Medal—G. L. Y. Ingram ; Certificate of Merit—L. Thompson.

Centenary Prizes : Class A—S. J. Gilbert ; Class B—F. G. Buxton ; Class C—B. Gorton ; Class D—B. H. Mellon.

Royal Agricultural Society's Medals : Silver Medal—B. H. Mellon ; Bronze Medal—G. F. Banham.

Ralli Prizes in Practical Surgery : 1st. (£5 5s.)—V. Pride-Jones ; 2nd (£3 3s.)—E. J. Barrowcliffe ; 3rd (£2 2s.)—G. F. Banham.

Clinical Prizes : Class A. 1st—J. A. Edwards ; 2nd—A. C. Holl ; 3rd—C. E. W. Bryan.

Class B. 1st—E. B. Reynolds ; 2nd—R. E. Leach ; 3rd—W. A. Pool.

Class C. 1st—H. D. Sparrow ; 2nd—D. Meadows ; 3rd—J. C. Gaunt.

Class D. 1st—G. F. Banham ; 2nd—M. Cahill ; 3rd—L. Thompson.

Class Prizes : Class D. Veterinary Medicine : 1st—B. H. Mellon ; 2nd—L. Thompson. Surgery : 1st—B. H. Mellon ; 2nd—J. H. Spreull.

Class C. Pathology : 1st—B. Gorton ; 2nd—D. Meadows. Hygiene : 1st—B. Gorton ; 2nd—D. A. E. Cabot. Materia Medica : 1st—B. Gorton ; 2nd—D. Meadows.

Class B. Anatomy : 1st :—F. G. Buxton ; 2nd—E. B. Reynolds. Histology : 1st—J. T. Edwards ; 2nd—E. B. Reynolds. Physiology : 1st—F. G. Buxton ; 2nd—G. F. Steevenson.

Class A. Chemistry and Toxicology : 1st—S. J. Gilbert ; 2nd—W. F. Morton. Practical Chemistry : 1st—W. P. Hamlyn ; 2nd—E. M. Robinson. Biology : 1st—S. J. Gilbert ; 2nd—A. A. Pryer. Minor Anatomy : 1st—P. L. Thierry ; 2nd—S. W. Marriott. Physics : 1st—S. J. Gilbert ; 2nd—S. W. Marriott.

Speaking of the Coleman prizes, which are awarded on the result of examinations in Glanders, Diseases of the Eye, and Diseases of the Foot, Sir John said it had occurred to some of the College staff that the terms governing the award might, at some not very distant date, have to be altered if it should happen, as was hoped, that glanders became an extinct disease. The material would then be lacking to give to the teaching that practical character at which the teaching aimed. From the teachers' point of view it was a satisfaction to be able to state that there was still enough material to enable the teaching to be theoretical and practical!

A hearty vote of thanks was accorded to the Chairman, on the proposition of Sir John M'Fadyean, who paid a tribute to Col. Queripel's work as Director-General of the Indian Civil Veterinary Department and as one of the Governors of the College.

The CHAIRMAN briefly returned thanks, and the meeting closed.

Veterinary Inspection at Scottish Shows.

The Cawdor Cup joint committee held a meeting on Sept. 29th which did good work, and did it unanimously and harmoniously. The desire for a veterinary inspection of breeding stallions is growing, and there will be general agreement among horse-owners that the meeting on Wednesday was representative, and not likely to do what might be injurious to the interests of either owners of stallions or those using them. A bench composed of Messrs. Robb and Rutherford, with Principal McCall as referee or oversman, is a bench beyond suspicion. It has long been a truism in the west country that when a horse passes Mr. Andrew Robb as "sound" he is sound. Mr. Rutherford has long enjoyed an equally good reputation in the east country, and has frequently officiated at the London Spring Shows. The granting of a certificate when demanded, on payment of a guinea, should meet the views of district societies, and it will not be surprising if what was decided on Wednesday should lead these societies to renew their patronage of the Stallion Show.—*The Scottish Farmer.*

Notification Fee for Veterinary Surgeons.

Lord Carrington (President of the Board of Agriculture) has introduced in the House of Lords a very short Bill consisting of the following two clauses :

(1) The local authority for the purposes of the Diseases of Animals Acts, 1894 to 1903, shall pay to a veterinary surgeon or veterinary practitioner in respect of every notification of disease made by him to the local authority or any officer of the local authority in pursuance of an order under those Acts requiring such a notification, such fee not exceeding two shillings and sixpence, as may be prescribed by the order.

(2) This Act may be cited as the Diseases of Animals Act, 1909, and shall be construed as one of the Diseases of Animals Acts, 1894 to 1903, and those Acts and this Act may be cited together as the Diseases of Animals Acts, 1894 to 1909.

The Meat Trades' Journal says :—This Bill, if it becomes operative, seems to be in the right direction, but only a very small step, as nothing short of compulsory notification by the owners of any sick, diseased, or injured animal, can ever satisfactorily deal with the general question.

In the House of Lords, Monday, Oct. 4.

DISEASES OF ANIMALS BILL.

This Bill passed through Committee without amendment.

October 5.

On the motion of EARL CARRINGTON, this Bill was read the third time.

Honorary Assistant Sanitary Inspectors.

To the Editor of The Meat Trades' Journal.

May I ask the favour of your valued columns for the following, namely, as you are aware, about two months ago you announced that the Sevenoaks Urban District Council had appointed the local Inspector for the Royal Society for the Prevention of Cruelty to animals as "Honorary Sanitary Inspector" for the Urban District of Sevenoaks, and that the Federation at once challenged this appointment and requested that it be cancelled. At same time traders in Sevenoaks were advised, for the protection of their undoubted rights and privileges as occupiers of private premises, not to admit thereon this newly-appointed "Honorary Sanitary Inspector." I am pleased to say that the action taken by the Federation has been entirely successful, the following communication having been received this forenoon from the Clerk to the Sevenoaks Council:—

APPOINTMENT OF HONORARY ASSISTANT SANITARY INSPECTOR.

"Dear Sir,—Referring to the correspondence between the Association and the Council, I am to inform you that at the meeting of the Council held yesterday, 21st inst., the resolution of the Council of the 27th July last, "appointing the Inspector for the time being of the R.S.P.C.A. Honorary Sanitary Inspector for the Urban District of Sevenoaks," was rescinded.—Yours faithfully.

HERBERT J. THOMPSON, *Clerk to the Council.*"

With a view to preventing any such undue interference with our traders, as an appointment of this kind must necessarily cause, I would urge that in any district where the R.S.P.C.A. endeavour to secure the appointment of their officials as "Honorary Assistant Sanitary Inspectors," or where such has already been done (as I understand there are a few cases), the facts should instantly be communicated to the undersigned, when the necessary action for the proper protection of our traders will be forthwith taken.—Faithfully yours,

WILLIAM PAYNE, *Secretary.*

The Jury Lists (Norfolk).

At the Harleston (Norfolk) Petty Sessions on September 24th, Mr. Edmund Reeve (Mills and Reeve, Norwich) made an application that the Bench should strike off the Jury List the names of Messrs. Herbert and John Buckingham. Mr. Reeve said that this application was the first of its kind in Norfolk, but the Bench need not be biassed or guided by that fact. His clients were brothers and carried on the profession of veterinary surgeons. Both were members of the Royal College of Veterinary Surgeons, and thus as Registered medical practitioners they were entitled to exemption from serving on juries. In addition, Mr. Herbert Buckingham was Veterinary Inspector to the Local Authority in no less than 30 odd parishes. He (Solicitor for the applicants) read cases recorded in *The Veterinary Record*, and he was also familiar with the authorities on the subject. The Bench considered the question and decided that the names should be struck off the List.

Motor-Car Licenses.

When Clause 66 of the Finance Bill came up for discussion in the Commons on Friday, 24th ult., Sub-section (4), which is as follows: "(4) If a duly qualified medical practitioner proves to the satisfaction of the Commissioners or Council by whom the licence is granted that any motor car kept by him is kept for the purpose of his profession, he shall be entitled to an allowance in respect of the duty payable under this section on the car equal to half the amount of duty so payable," Mr. Hunt moved to insert the words "or veterinary surgeon" after medical practitioner, urging that this class had a claim for exemption on humanitarian grounds only second to that of doctors. The Chancellor of the Exchequer could not see his way to accept the amendment. The moment he began to extend the exemptions there was a difficulty in drawing a line. In the case of doctors there was everything to be said in favour of encouraging the use of motor cars, but considerable difficulty would arise with an extension of the abatement. The amendment was supported by Mr. G. D. Faber, Captain Craig, Mr. Essex, Mr. Gretton, and Mr. A. S. Wilson. The Committee divided, and there voted for the amendment 61. against 156; majority against 95.

Personal.

RABAGLIATI.—On the 22nd inst., at Fidra, Zeitoun, Cairo, the wife of Duncan Silvestro Rabagliati, of a son

FEARNSIDE.—At the Ballachulish Hotel, Argyleshire, on Sept. 20, the wife of J. A. Fearnside, M.R.C.V.S., of a daughter. Both well.

Mr. G. E. GIBSON, Oakham. Pony mare Dixie, 13.1, by The Kid, was second in the International Horse Show, in a class for ponies to be ridden by boys and girls.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 1.

TERRITORIAL FORCE. UNATTACHED LIST.

D. R. Chatterley to be Vet.-Lieut. Dated Aug. 17.

Oct. 5.

HONOURABLE ARTILLERY COMPANY OF LONDON.

Vet.-Capt. Frederick S. Stanley resigns his commission. Dated March 31, 1908.

INDIA OFFICE, Oct. 5.

INDIAN CIVIL VETERINARY DEPARTMENT.

Capt. George Kemp Walker, F.R.C.V.S., to be Major. Dated July 25, 1909.

THE MORPHIA HABIT AND ITS VOLUNTARY RENUNCIATION, by OSCAR JENNINGS, Cr. 8vo., 492 pp., cl. lettd. 7/6 net. Balliere, Tindall and Cox, London, W.C.

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. A. E. Roberts, A. S. L.

The construction of Stables, J. S. Lloyd, (IX. Intl. Vety. Congress, The Hague.)

Report of Chief Veterinary Inspector, Sheffield Corporation, 1908, J. S. Lloyd,

Merck's Annual Report.

Original articles and reports should be written on one side of the paper only and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editors to be addressed 20 Fulham Road, S.W.